

=> b casre  
FILE 'CASREACT' ENTERED AT 14:08:06 ON 13 AUG 2008  
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FILE CONTENT:1840 - 11 Aug 2008 VOL 149 ISS 7

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\* \*  
\* CASREACT now has more than 15.3 million reactions \*  
\* \*\*\*\*\*

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d his

(FILE 'HOME' ENTERED AT 14:03:34 ON 13 AUG 2008)

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ACT J086C1R/A

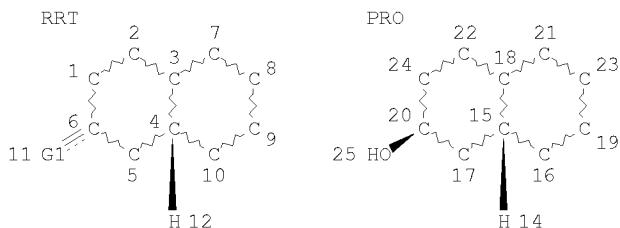
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L1 STR  
L2 SCR 1841  
L3 973 SEA FILE=CASREACT SSS FUL L1 AND L2 < 6405 REACTIONS>  
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L4 7244 OC4-C5-OC5-C6-C6-C6/ES

FILE 'CASREACT' ENTERED AT 14:05:18 ON 13 AUG 2008  
L5 58 L3 AND L4  
L6 38 L5 AND (PD<=20021028 OR AD<=20021028 OR PRD<=20021028)

FILE 'CASREACT' ENTERED AT 14:08:06 ON 13 AUG 2008

=> d que sta 13  
L1 STR



VAR G1=O/S  
NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 24

STEREO ATTRIBUTES:  
STEREO DEFAULT RELATIVE  
NUMBER OF CHIRAL CENTERS IS 3  
L2 SCR 1841  
L3 973 SEA FILE=CASREACT SSS FUL L1 AND L2 ( 6405 REACTIONS)

99.1% DONE 1000000 VERIFIED 6405 HIT RXNS 973 DOCS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.43

FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED VERIFICATIONS: 1008972 TO 1008972  
PROJECTED ANSWERS: 973 TO 1134

=> d bib abs crd 16 tot

L6 ANSWER 1 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
AN 140:375358 CASREACT

II Stereospecific reduction of saponin-3-ones  
IN Gunning, Philip James; Tiffin, Peter David  
DA Phytochem Limited, UK  
SO PCT Int. Appl., 41 pp.  
CODEN: PIX02

DT Patent  
LA English  
FAN, CHN

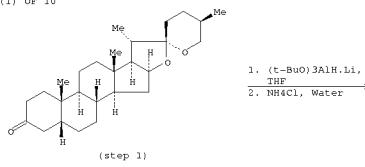
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO--2004037845	A1	20040506	2003W0-GB0001780	20030428
W:	AF, AG, AL, AM, AI, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CY, DE, DK, DO, DZ, EC, ES, F, GA, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, MZ, NL, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AF, GM, KE, MZ, MW, MC, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, EG, GE, ID, LU, MW, MC, NL, PI, RO, SE, SI, SK, TR, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PI, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG			
CA----2503899	A1	20040505	2003CA-002503899	20030428
AU--2003543008	A	20040513	2003AU-0000543008	20030428
EP----1558627	A1	20040513	2003EP-00058627	20030428
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, IR, BG, CZ, EE, HU, SK			
BR--2003015746	A	20050906	2003BR-000015746	20030428
CN----1723218	A	20060118	2003CN-00001723218	20030428
JP--2006015650	F	20060202	2003JP-000015650	20030428
CN----101195650	A	20080611	2007CN-0101195650	20030428
RU----2326890	C2	20080620	2005RU-000011593	20030428
IN--2005MN00308	A	20060505	2005IN-MN0000308	20050420
MX--2005PA04494	A	20050726	2005MX-PA0004494	20050427
US--20050139	A1	20050223	2005US-000531086	20050421
IN--2007MN01247	A	20071019	2007IN-MN0001247	20070817

PRA1  
2002GB-000025106 20021028  
2003GB-000021505 20030122  
2003CN-000823144 20030428  
2003CN-00001723218 20030428  
2005IN-MN0000308 20050420  
OS MARPAT 140:375358

AB A method to stereospecifically prepare a steroidal saponin or a derivative thereof by reducing a 3-keto, 5 $\beta$ -H steroidal saponin with a hindered organoborane reagent or derivative. A 3-keto, 5 $\beta$ -H steroidal saponin or derivative may be prepared by reducing the 3-keto, 5 $\beta$ -H steroidal saponin using as reducing agent which is a relatively highly hindered organoborane reagent or by SN<sub>2</sub> inversion of a 3 $\alpha$ -hydroxy, 5 $\beta$ -H steroidal saponin or derivative. The 3 $\alpha$ -hydroxy, 5 $\beta$ -H steroidal saponin or derivative may be used to prepare a 3 $\alpha$ -hydroxy, 5 $\beta$ -H steroidal saponin or derivative. This invention provides a convenient route to useful steroidal saponins such as sarsasapogenin, episarsasapogenin, smilagenin, epismilagenin and esters thereof, from readily available or easily prepared starting materials (e.g. diosgenone, prepared from diosgenin).

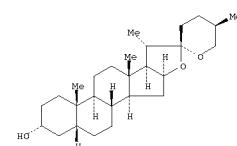
L6 ANSWER 1 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(1) OF 10



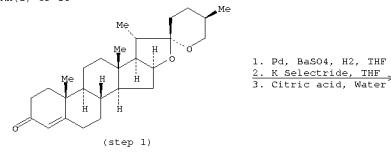
1. (t-BuO)<sub>3</sub>AlH.Li,  
THF  
2. NH<sub>4</sub>Cl, Water

RX(1) OF 10



CON: 2 hours, 14 deg C → room temperature

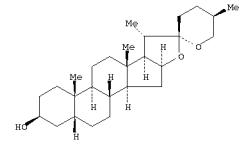
RX(2) OF 10



1. Pd, BaSO<sub>4</sub>, H<sub>2</sub>, THF  
2. K Selectride, THF  
3. Citric acid, Water

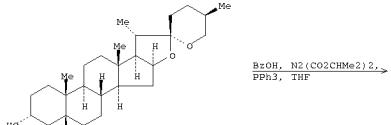
L6 ANSWER 1 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(2) OF 10



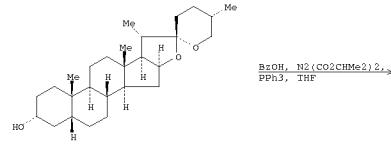
NOTE: Under nitrogen  
STAGE(1): 2 hours, room temperature, 1 atm  
STAGE(2): 30 minutes, -15 deg C  
STAGE(3): 0 deg C

RX(3) OF 10



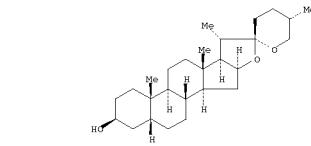
L6 ANSWER 1 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(4) OF 10



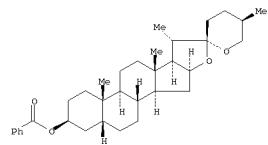
BzCO<sub>2</sub>, N<sub>2</sub>(CO<sub>2</sub>CHMe<sub>2</sub>)<sub>2</sub>,  
PPh<sub>3</sub>, THF

RX(4) OF 10



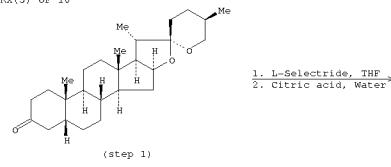
CON: 2 hours, room temperature

RX(3) OF 10



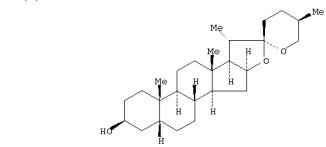
CON: 2 hours, room temperature

RX(5) OF 10



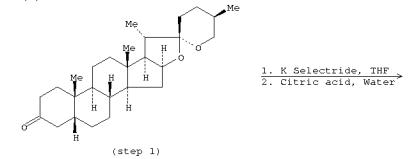
1. Li-Selectride, THF  
2. Citric acid, Water

RX(5) OF 10

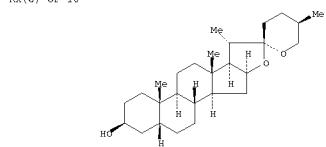


NOTE: nitrogen atm.  
CON: STAGE(1) 90 minutes, -10 deg C  
STAGE(2) 0 deg C

RX(6) OF 10

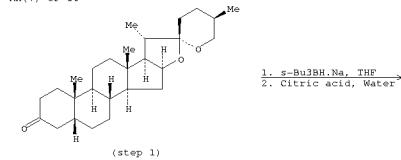


RX(6) OF 10

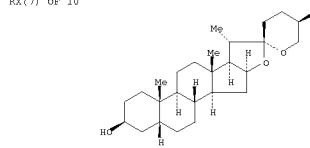


NOTE: nitrogen atm.  
CON: STAGE(1) 30 minutes, -15 deg C  
STAGE(2) 0 deg C

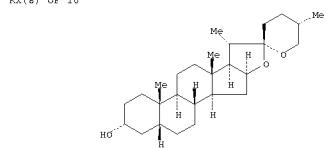
RX(7) OF 10



RX(7) OF 10

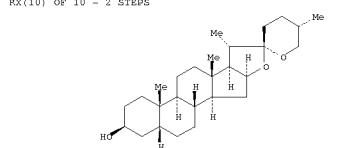


RX(8) OF 10



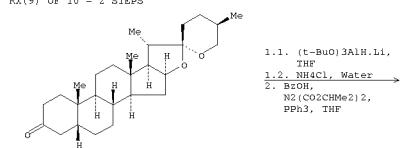
NOTE: nitrogen atm.  
CON: 5 hours, -23 - -30 deg C

RX(8) OF 10

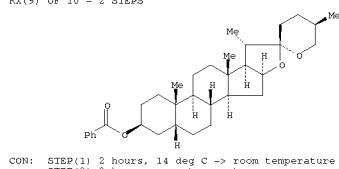


NOTE: 1) nitrogen atm.  
CON: STEP(1) 5 hours, -23 - -30 deg C  
STEP(2) 2 hours, room temperature

RX(9) OF 10 - 2 STEPS

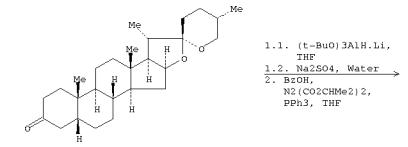


RX(9) OF 10 - 2 STEPS



CON: STEP(1) 2 hours, 14 deg C → room temperature  
STEP(2) 2 hours, room temperature

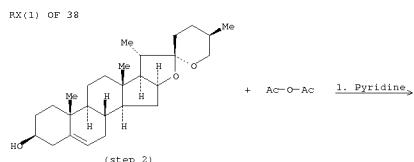
RX(10) OF 10 - 2 STEPS



L6 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 138:369057 CASREACT  
 II Ecdysteroid analogs based on steroidal sapogenins I. Synthesis of bromo-derivatives from diosgenin. Preliminary study of their biological activity  
 AU Castro, Armando Zaldo; Tacoronte, Juan Enrique; Menchado, Francisco Coll;  
 De la Paz, Lucita Aguilera; Cabrera, Maria Teresa  
 CS Faculty of Chemistry, Dept. Organic Chemistry, Laboratory of Natural  
 Products, University of Havana, Havana, Cuba  
 SO Revista CENIC, Ciencias Químicas (2002), 33(1), 19-24  
 CODEN: RCCQBR, ISSN: 1015-8552  
 PB Centro Nacional de Investigaciones Científicas  
 DT Journal  
 LA English  
 GI

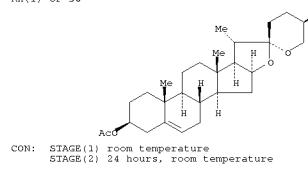
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Ecdysteroids represent a large family of steroids comprising more than 100 compds. They have been found in both invertebrates and plant kingdom where they play an important role in some facets of development metamorphosis and reproduction. In plants they provide a potential protection against phytophagous predators. One of the most important report is the synthesis and structural elucidation, through NMR ( $^1\text{H}$ - $^{13}\text{C}$ ) and FTIR techniques, of advanced intermediates synthesized from naturally and com. available steroid sapogenin diosgenin. Some classic reactions and optimized conditions were used obtaining the 10 intermediates: epoxidations, and quantitative cleavage of epoxide rings; cis-hydroxylation to double bonds and a-halogenation to carbonyl compds. The biol. activity of several obtained intermediates, e.g. I and II, was researched in order to establish the real potential of these derivs. as insecticides. The results suggest that this kind of bromine derivs. could be used as genetic modulator for controlling Blatella germanica, a typical cockroach pest in human communities.

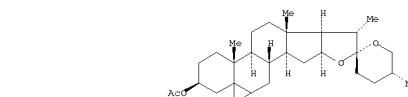
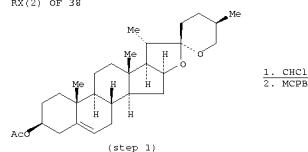


L6 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(1) OF 38

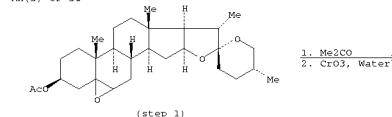


RX(2) OF 38



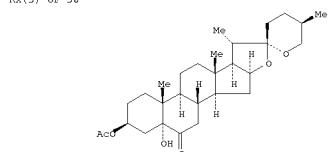
CON: STAGE(1) room temperature  
 STAGE(2) 30 minutes, room temperature

RX(3) OF 38



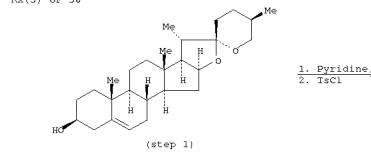
L6 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(3) OF 38

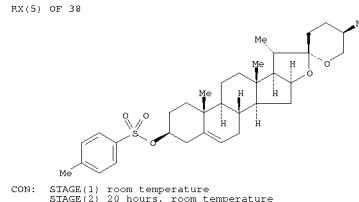


L6 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

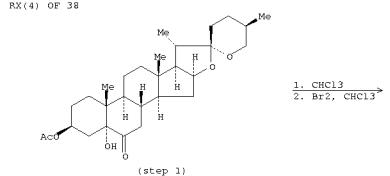
RX(5) OF 38



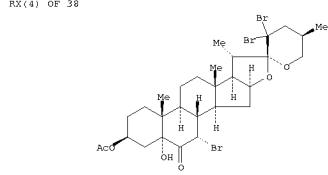
RX(5) OF 38



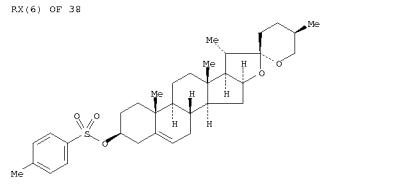
RX(4) OF 38



RX(4) OF 38

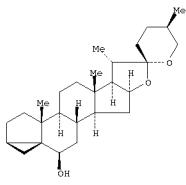


RX(6) OF 38



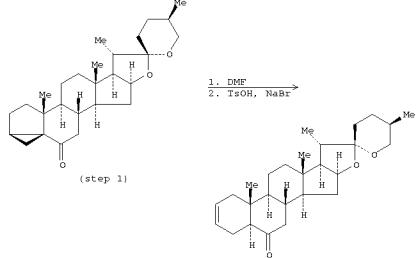
AcOK, Water, Me2CO

RX(6) OF 38

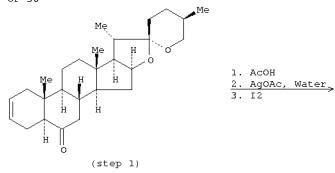


CON: 20 hours, reflux

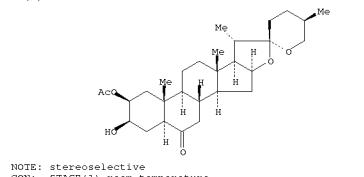
RX(8) OF 38

CON: STAGE(1) room temperature  
STAGE(2) room temperature; 3 hours, reflux

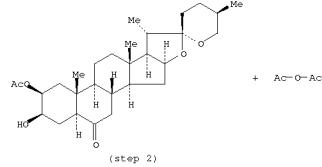
RX(9) OF 38



RX(9) OF 38

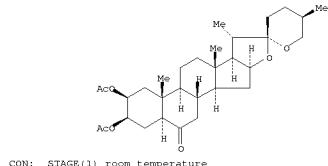
NOTE: stereoselective  
CON: STAGE(1) room temperature  
STAGE(2) 15 minutes, room temperature  
STAGE(3) room temperature; 3 hours, 50 - 60 deg C

RX(10) OF 38

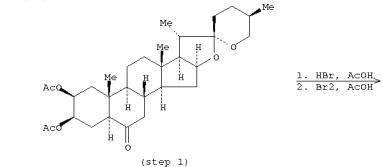


1. Pyridine

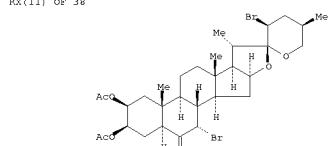
RX(10) OF 38

CON: STAGE(1) room temperature  
STAGE(2) 24 hours, room temperature

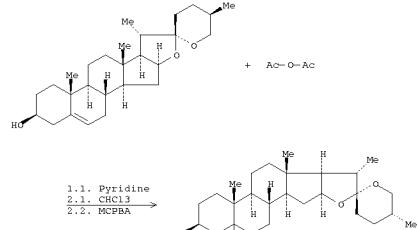
RX(11) OF 38



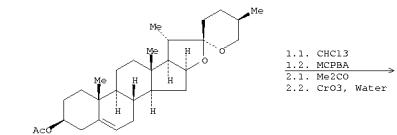
RX(11) OF 38

NOTE: key step, stereoselective  
CON: STAGE(1) room temperature  
STAGE(2) room temperature; 2 hours, 50 deg C

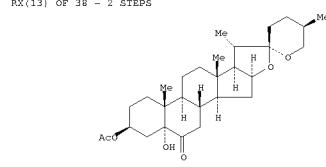
RX(12) OF 38 - 2 STEPS

CON: STEP(1.1) room temperature  
STEP(1.2) 24 hours, room temperature  
STEP(2.1) room temperature  
STEP(2.2) 30 minutes, room temperature

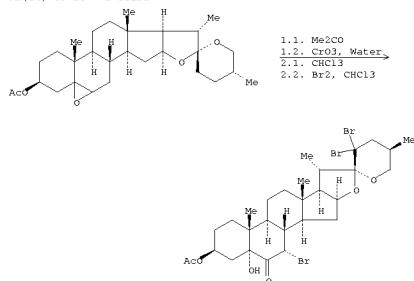
RX(13) OF 38 - 2 STEPS



RX(13) OF 38 - 2 STEPS

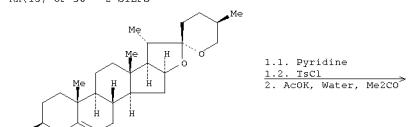
NOTE: 2) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 30 minutes, room temperature  
STEP(2.1) room temperature  
STEP(2.2) reflux

## RX(14) OF 38 - 2 STEPS

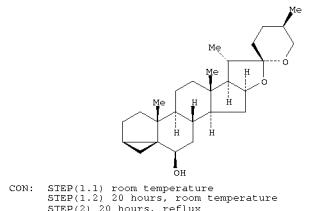


NOTE: 1) stereoselective, 2) key step, stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) reflux  
STEP(2.1) room temperature  
STEP(2.2) 2 hours, room temperature

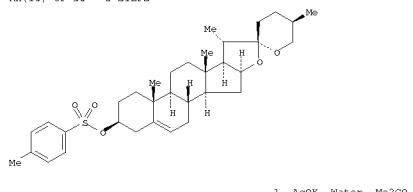
## RX(15) OF 38 - 2 STEPS



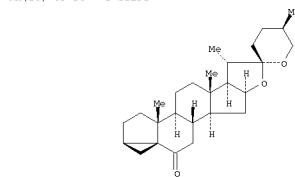
## RX(15) OF 38 - 2 STEPS



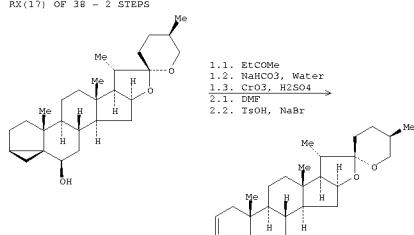
## RX(16) OF 38 - 2 STEPS



## RX(16) OF 38 - 2 STEPS

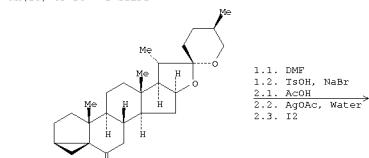


## RX(17) OF 38 - 2 STEPS

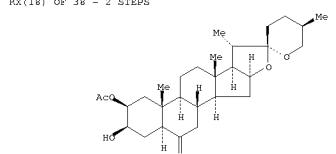


CON: STEP(1.1) room temperature  
STEP(1.2) room temperature; 5 hours, reflux; reflux -> 5 deg C  
STEP(1.3) 3 hours, 5 deg C  
STEP(2.1) room temperature  
STEP(2.2) room temperature; 3 hours, reflux

## RX(18) OF 38 - 2 STEPS

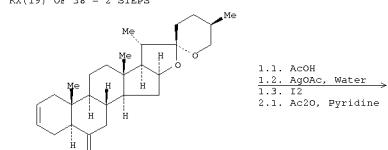


## RX(18) OF 38 - 2 STEPS

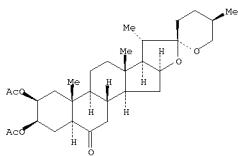


NOTE: 2) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) room temperature; 3 hours, reflux  
STEP(2.1) room temperature  
STEP(2.2) 15 minutes, room temperature  
STEP(2.3) room temperature; 3 hours, 50 - 60 deg C

## RX(19) OF 38 - 2 STEPS

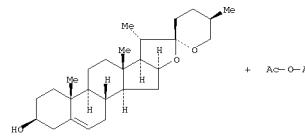


## RX(19) OF 38 - 2 STEPS



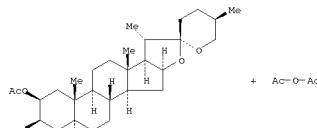
NOTE: 1) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 15 minutes, room temperature  
STEP(1.3) room temperature; 3 hours, 50 - 60 deg C  
STEP(2.1) room temperature  
STEP(2.2) 24 hours, room temperature

## RX(21) OF 38 - 3 STEPS



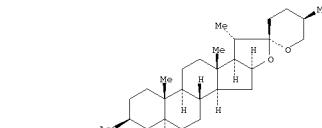
1.1. Pyridine  
2.1. CHCl3  
2.2. MCPBA  
3.1. Me2CO  
3.2. CrO3, Water

## RX(20) OF 38 - 2 STEPS



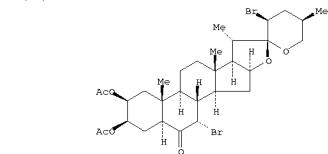
1.1. Pyridine  
2.1. HBr, AcOH  
2.2. Br2, AcOH

## RX(21) OF 38 - 3 STEPS



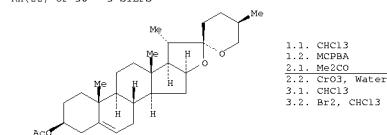
NOTE: 3) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 24 hours, room temperature  
STEP(2.1) room temperature  
STEP(2.2) 15 minutes, room temperature  
STEP(3.1) room temperature  
STEP(3.2) reflux

## RX(20) OF 38 - 2 STEPS



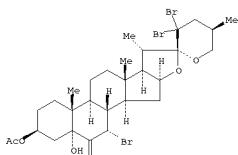
NOTE: 2) key step, stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 24 hours, room temperature  
STEP(2.1) room temperature  
STEP(2.2) room temperature; 2 hours, 50 deg C

## RX(22) OF 38 - 3 STEPS



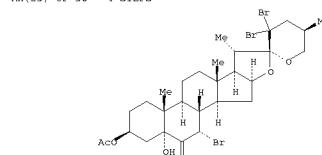
1.1. CHCl3  
1.2. MCPBA  
2.1. Me2CO  
2.2. CrO3, Water  
3.1. CHCl3  
3.2. Br2, CHCl3

## RX(22) OF 38 - 3 STEPS



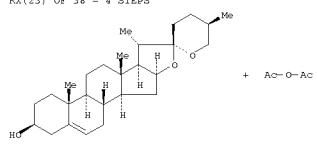
NOTE: 2) stereoselective, 3) key step, stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 24 hours, room temperature  
STEP(2.1) room temperature  
STEP(2.2) reflux  
STEP(3.1) room temperature  
STEP(3.2) 2 hours, room temperature

## RX(23) OF 38 - 4 STEPS



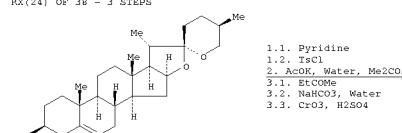
NOTE: 3) stereoselective, 4) key step, stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 24 hours, room temperature  
STEP(2.1) room temperature  
STEP(2.2) 30 minutes, room temperature  
STEP(3.1) room temperature  
STEP(3.2) reflux  
STEP(4.1) room temperature  
STEP(4.2) 2 hours, room temperature

## RX(23) OF 38 - 4 STEPS



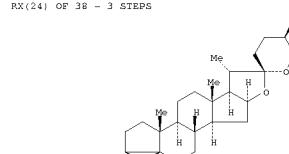
1.1. Pyridine  
2.1. CHCl3  
2.2. MCPBA  
3.1. Me2CO  
3.2. CrO3, Water  
4.1. CHCl3  
4.2. Br2, CHCl3

## RX(24) OF 38 - 3 STEPS



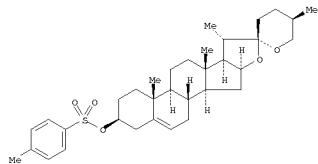
1.1. Pyridine  
1.2. TsCl  
2. AcOK, Water, Me2CO  
3.1. EtCOMe  
3.2. NaHCO3, Water  
3.3. CrO3, H2SO4

## RX(24) OF 38 - 3 STEPS



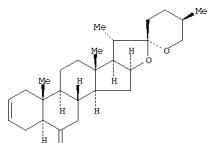
CON: STEP(1.1) room temperature  
STEP(1.2) 20 hours, room temperature  
STEP(2.1) 10 hours, reflux  
STEP(2.2) room temperature  
STEP(3.2) room temperature; 5 hours, reflux; reflux -> 5 deg C  
STEP(3.3) 3 hours, 5 deg C

RX(25) OF 38 - 3 STEPS



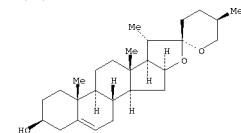
1. AcOK, Water, Me2CO  
2.1. EtCOMe  
2.2. NaHCO<sub>3</sub>, Water  
2.3. CrO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>  
3.1. DMF  
3.2. TsOH, NaBr

RX(25) OF 38 - 3 STEPS



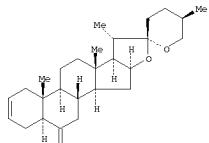
CON: STEP(1) 20 hours, room temperature  
STEP(2.1) room temperature  
STEP(2.2) room temperature; 5 hours, reflux; reflux -> 5 deg C  
STEP(2.3) 3 hours, 5 deg C  
STEP(3.1) room temperature  
STEP(3.2) room temperature; 3 hours, reflux

RX(26) OF 38 - 4 STEPS



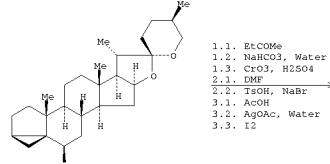
1.1. Pyridine  
1.2. TsCl  
2. AcO, Water, Me2CO  
3.1. EtCOMe  
3.2. NaHCO<sub>3</sub>, Water  
3.3. CrO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>  
4.1. DMF  
4.2. TsOH, NaBr

RX(26) OF 38 - 4 STEPS



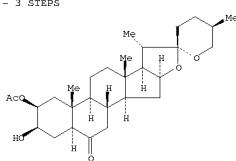
CON: STEP(1.1) room temperature  
STEP(1.2) 20 hours, room temperature  
STEP(2) 20 hours, reflux  
STEP(2.1) room temperature  
STEP(3.2) room temperature; 5 hours, reflux; reflux -> 5 deg C  
STEP(3.3) 3 hours, 5 deg C  
STEP(4.1) room temperature  
STEP(4.2) room temperature; 3 hours, reflux

RX(27) OF 38 - 3 STEPS



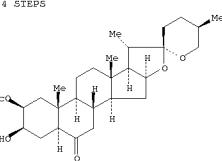
1.1. EtCOMe  
1.2. NaHCO<sub>3</sub>, Water  
1.3. CrO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>  
2.1. DMF  
2.2. TsOH, NaBr  
3.1. AcOH  
3.2. AgOAc, Water  
3.3. I<sub>2</sub>

RX(27) OF 38 - 3 STEPS



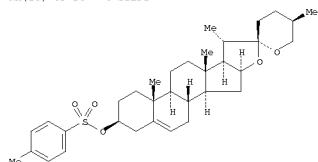
NOTE: 3) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) room temperature; 5 hours, reflux; reflux -> 5 deg C  
STEP(1.3) 3 hours, 5 deg C  
STEP(2.1) room temperature  
STEP(2.2) room temperature; 3 hours, reflux  
STEP(3.1) room temperature  
STEP(3.2) 15 minutes, room temperature  
STEP(3.3) room temperature; 3 hours, 50 - 60 deg C

RX(28) OF 38 - 4 STEPS



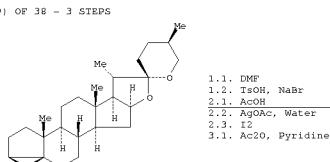
NOTE: 4) stereoselective  
CON: STEP(1) 20 hours, reflux  
STEP(2.1) room temperature  
STEP(2.2) room temperature; 5 hours, reflux; reflux -> 5 deg C  
STEP(3.1) room temperature  
STEP(3.2) room temperature; 3 hours, reflux  
STEP(4.1) room temperature  
STEP(4.2) 15 minutes, room temperature  
STEP(4.3) room temperature; 3 hours, 50 - 60 deg C

RX(28) OF 38 - 4 STEPS



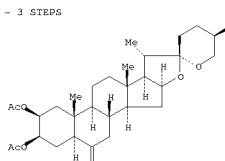
1. AcOK, Water, Me2CO  
2.1. EtCOMe  
2.2. NaHCO<sub>3</sub>, Water  
2.3. CrO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>  
3.1. DMF  
3.2. TsOH, NaBr  
4.1. AcOH  
4.2. AgOAc, Water  
4.3. I<sub>2</sub>

RX(29) OF 38 - 3 STEPS



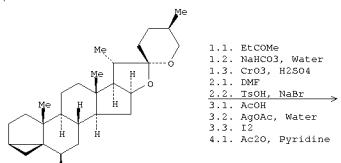
1.1. DMF  
1.2. TsOH, NaBr  
2.1. AcOH  
2.2. AgOAc, Water  
3.1. Ac<sub>2</sub>O, Pyridine

RX(29) OF 38 - 3 STEPS

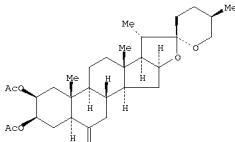


NOTE: 2) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) room temperature; 3 hours, reflux  
STEP(2.1) room temperature  
STEP(2.2) 15 minutes, room temperature  
STEP(3.1) room temperature; 3 hours, 50 - 60 deg C  
STEP(3.2) 24 hours, room temperature

## RX(30) OF 38 - 4 STEPS

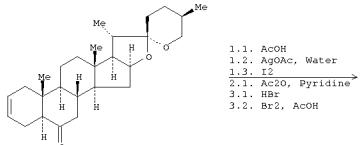


## RX(30) OF 38 - 4 STEPS

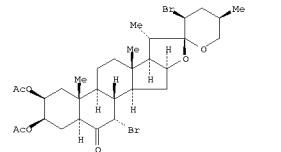


NOTE: 3) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) room temperature; 5 hours, reflux; reflux → 5 deg C  
STEP(2.1) room temperature; 5 deg C  
STEP(2.2) room temperature; 3 hours, reflux  
STEP(2.3) room temperature; 3 hours, 50 - 60 deg C  
STEP(3.1) 15 minutes, room temperature  
STEP(3.2) room temperature; 3 hours, 50 - 60 deg C  
STEP(4.1) room temperature  
STEP(4.2) 24 hours, room temperature

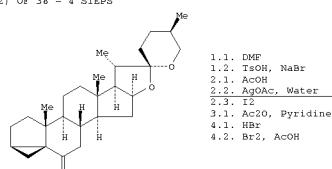
## RX(31) OF 38 - 3 STEPS



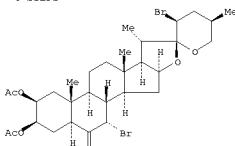
## RX(31) OF 38 - 3 STEPS



## RX(32) OF 38 - 4 STEPS

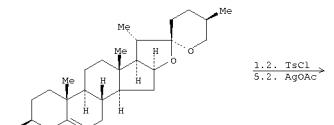


## RX(32) OF 38 - 4 STEPS

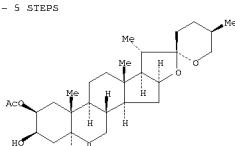


NOTE: 2) stereoselective, 4) key step, stereoselective  
CON: STEP(1.1) room temperature; 3 hours, reflux  
STEP(1.2) room temperature; 3 hours, 50 - 60 deg C  
STEP(2.1) room temperature  
STEP(2.2) 15 minutes, room temperature  
STEP(2.3) room temperature; 3 hours, 50 - 60 deg C  
STEP(3.1) room temperature  
STEP(3.2) 24 hours, room temperature  
STEP(4.1) room temperature  
STEP(4.2) room temperature; 2 hours, 50 deg C

## RX(33) OF 38 - 5 STEPS

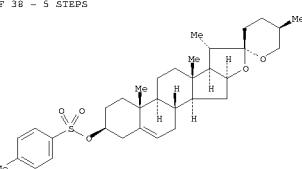


## RX(33) OF 38 - 5 STEPS

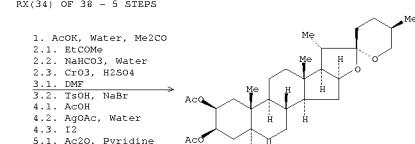


NOTE: 5) stereoselective  
CON: STEP(1.1) room temperature  
STEP(1.2) 20 hours, room temperature  
STEP(1.3) 20 hours, reflux  
STEP(2.1) room temperature  
STEP(2.2) 3 hours, 5 deg C  
STEP(2.3) room temperature; 5 hours, reflux; reflux → 5 deg C  
STEP(3.1) room temperature  
STEP(3.2) 15 minutes, room temperature  
STEP(4.1) room temperature; 3 hours, reflux  
STEP(5.1) room temperature  
STEP(5.2) 15 minutes, room temperature  
STEP(5.3) room temperature; 3 hours, 50 - 60 deg C

## RX(34) OF 38 - 5 STEPS



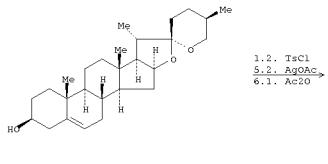
## RX(34) OF 38 - 5 STEPS



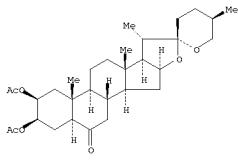
NOTE: 4) stereoselective  
CON: STEP(1.1) 20 hours, room temperature  
STEP(1.2) 20 hours, reflux  
STEP(1.3) 20 hours, room temperature; 5 hours, reflux; reflux → 5 deg C  
STEP(2.1) 3 hours, 5 deg C  
STEP(2.2) room temperature  
STEP(2.3) 15 minutes, room temperature  
STEP(3.1) room temperature  
STEP(3.2) 15 minutes, room temperature  
STEP(4.1) room temperature; 3 hours, reflux  
STEP(4.2) 15 minutes, room temperature  
STEP(4.3) room temperature; 3 hours, 50 - 60 deg C  
STEP(5.1) room temperature  
STEP(5.2) 24 hours, room temperature

16 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(35) OF 38 - 6 STEPS



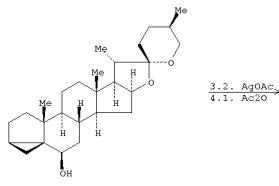
RX(35) OF 38 - 6 STEPS



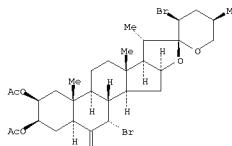
**NOTE:** 5) stereoselective  
**CON:** STEP(1.1) room temperature  
 STEP(1.2) 20 hours, room temperature  
 STEP(2) 20 hours, reflux  
 STEP(3) 3 hours, room temperature  
 STEP(3.2) room temperature; 5 hours, reflux; reflux → 5 deg C  
 STEP(3.3) 3 hours, 5 deg C  
 STEP(4) 20 hours, room temperature  
 STEP(4.2) room temperature; 3 hours, reflux  
 STEP(5) 1 room temperature  
 STEP(5.2) 15 minutes, room temperature  
 STEP(6) 24 hours, room temperature; 3 hours, 50 - 60 deg C  
 STEP(6.1) room temperature  
 STEP(6.2) 24 hours, room temperature

16 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(36) OF 38 - 5 STEPS



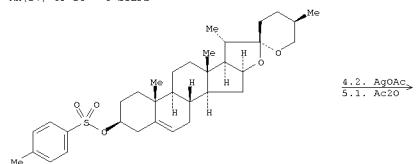
RX(36) OF 38 - 5 STEPS



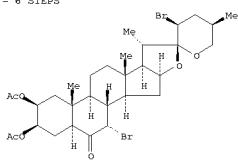
**NOTE:** 3) stereoselective, 5) key step, stereoselective  
**CON:** STEP(1.2) room temperature; 5 hours, reflux; reflux → 5 deg C  
 STEP(1.3) 3 hours, 5 deg C  
 STEP(2) 20 hours, room temperature  
 STEP(2.2) 20 hours, room temperature; 3 hours, reflux  
 STEP(3) 1 room temperature  
 STEP(3.2) 15 minutes, room temperature  
 STEP(4) 24 hours, room temperature; 3 hours, 50 - 60 deg C  
 STEP(4.1) room temperature  
 STEP(4.2) 24 hours, room temperature  
 STEP(5) 1 room temperature  
 STEP(5.2) room temperature; 2 hours, 50 deg C

16 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(37) OF 38 - 6 STEPS



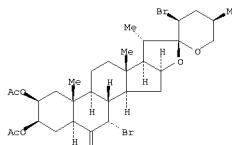
RX(37) OF 38 - 6 STEPS



**NOTE:** 4) stereoselective, 6) key step, stereoselective  
**CON:** STEP(1) 20 hours, reflux  
 STEP(2) 20 hours, room temperature  
 STEP(2.2) room temperature; 5 hours, reflux; reflux → 5 deg C  
 STEP(2.3) 3 hours, 5 deg C  
 STEP(3) 1 room temperature  
 STEP(3.2) 15 minutes, room temperature; 3 hours, reflux  
 STEP(4) 1 room temperature  
 STEP(4.2) 15 minutes, room temperature  
 STEP(5) 24 hours, room temperature; 3 hours, 50 - 60 deg C  
 STEP(5.1) room temperature  
 STEP(5.2) 24 hours, room temperature  
 STEP(6) 24 hours, room temperature  
 STEP(6.1) room temperature  
 STEP(6.2) 2 hours, 50 deg C

16 ANSWER 2 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

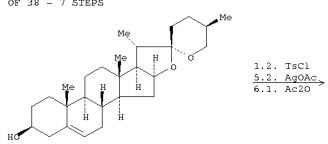
RX(38) OF 38 - 7 STEPS



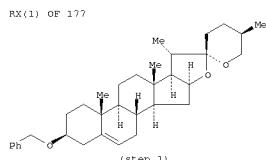
**NOTE:** 5) stereoselective, 7) key step, stereoselective  
**CON:** STEP(1.1) room temperature  
 STEP(1.2) 20 hours, room temperature  
 STEP(2) 20 hours, reflux  
 STEP(3) 3 hours, room temperature  
 STEP(3.2) room temperature; 5 hours, reflux; reflux → 5 deg C  
 STEP(4) 20 hours, room temperature  
 STEP(4.2) room temperature; 3 hours, reflux  
 STEP(5) 15 minutes, room temperature  
 STEP(5.3) room temperature; 3 hours, 50 - 60 deg C  
 STEP(6) 20 hours, room temperature  
 STEP(6.1) room temperature  
 STEP(7) 1 room temperature  
 STEP(7.1) room temperature; 2 hours, 50 deg C

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(38) OF 38 - 7 STEPS



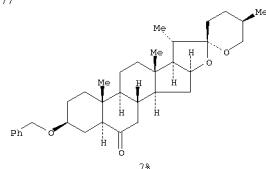
L6 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 138:89978 CASREACT  
 TI Glycosyl Trifluoroacetimidates. 2. Synthesis of Dioscin and Xiebai Saponin I  
 AU Liu, Biao; Tao, Houchoo  
 CS State Key Laboratory of Bio-organic and Natural Products Chemistry,  
 Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences,  
 Shanghai, 200032, Peop. Rep. China  
 SO Journal of Organic Chemistry (2002), 67(25), 9099-9102  
 CODEN JOCOAH; ISSN: 0022-3263  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB Two trisaccharide steroidal saponins, dioscin and Xiebai saponin I with various bioactivities, were efficiently synthesized using a novel methodology developed by glycosyl Ph trifluoroacetimidates as glycosylation donors. Thus, dioscin was synthesized in five steps and a 33% overall yield from diosgenin and glycosyl trifluoroacetimidates. In the synthesis, diosgenin was prepared from diosgenin in four steps and an overall 69% yield. All the glycosylation reactions involved in the present syntheses demonstrated that glycosyl trifluoroacetimidates were successful donors comparable to the corresponding glycosyl trichloroacetimidates.



1. BH3-Me2S, THF
2. NaOH, H2O2, Water
3. NaCl, Water
4. Martin's reagent, CH2Cl2

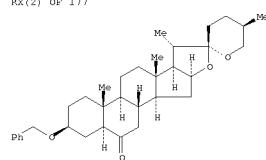
L6 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(1) OF 177



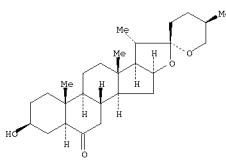
NOTE: stereoselective  
 CON: STAGE(1) 12 hours, room temperature  
 STAGE(2) overnight, room temperature; pH 7  
 STAGE(4) 5 hours, room temperature

RX(2) OF 177



Pd, H2, CH2Cl2, EtOH

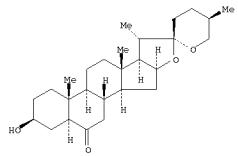
RX(2) OF 177



NOTE: stereoselective  
 CON: room temperature

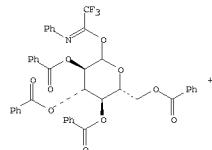
L6 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(3) OF 177

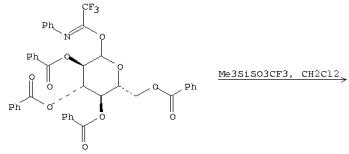


L6 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

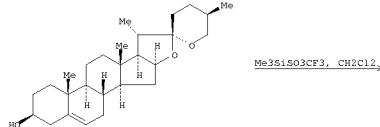
RX(4) OF 177



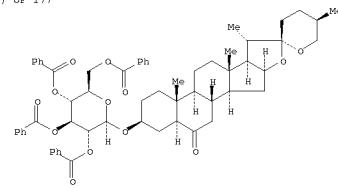
RX(3) OF 177



RX(4) OF 177

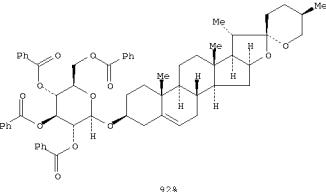


RX(3) OF 177



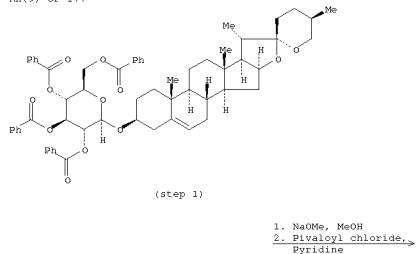
NOTE: stereoselective, mol. sieves used  
 CON: room temperature

RX(4) OF 177

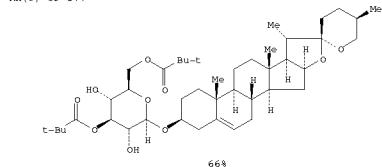


NOTE: stereoselective, mol. sieves used  
 CON: room temperature

RX(9) OF 177



RX(9) OF 177

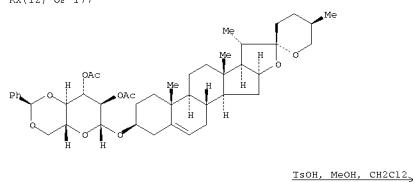


NOTE: stereoselective  
CON: STAGE(1) room temperature  
STAGE(2) 0 deg C

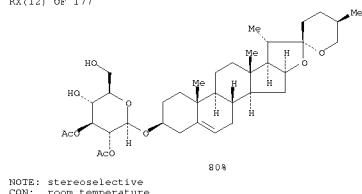
RX(10) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(11) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(12) OF 177

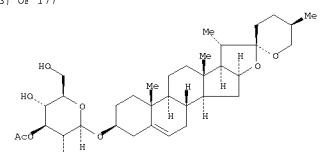


RX(12) OF 177

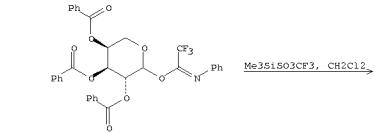


NOTE: stereoselective  
CON: room temperature

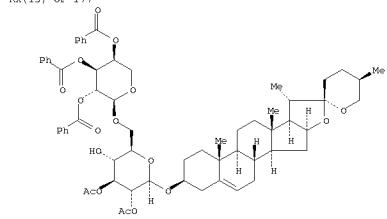
RX(13) OF 177



RX(13) OF 177



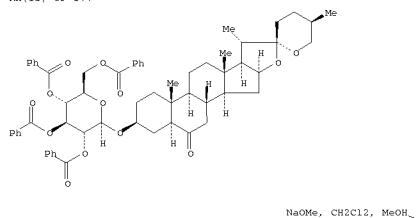
RX(13) OF 177



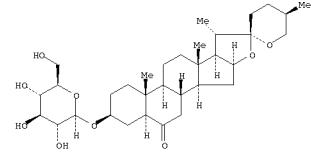
NOTE: stereoselective, mol. sieves used  
CON: -78 - room temperature deg C

RX(14) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(15) OF 177



RX(15) OF 177

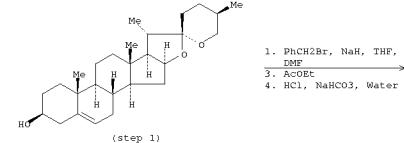


NOTE: stereoselective  
CON: STAGE(1) 2 hours, room temperature; pH 7

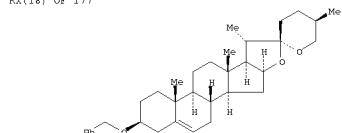
RX(16) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(17) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(18) OF 177

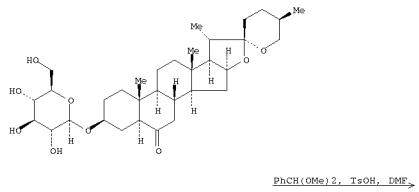


RX(18) OF 177

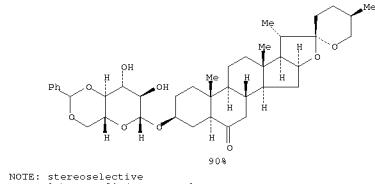


NOTE: stereoselective  
CON: STAGE(1) 1 hour, room temperature  
STAGE(2) 2 hours, room temperature; room temperature  $\rightarrow$  reflux

RX(19) OF 177



RX(19) OF 177

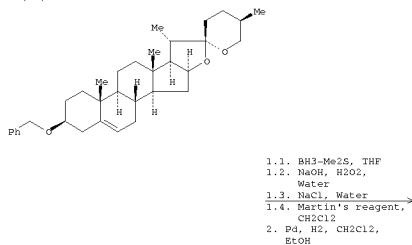


NOTE: stereoselective  
CON: 3 hours, 50 deg C, pH 3 - 4

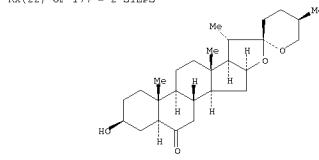
RX(20) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(21) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(22) OF 177 - 2 STEPS

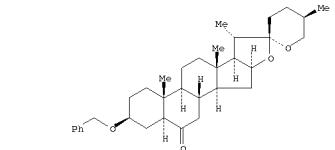


RX(22) OF 177 - 2 STEPS

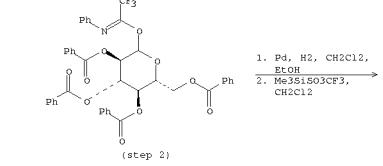


NOTE: 1) stereoselective, 2) stereoselective  
CON: STEP(1.1) 12 hours, room temperature  
STEP(1.2) overnight, room temperature; pH 7  
STEP(1.4) 5 hours, room temperature  
SiBP(2) room temperature

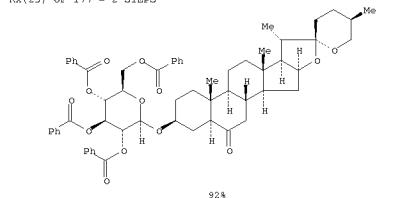
RX(23) OF 177 - 2 STEPS



RX(23) OF 177 - 2 STEPS

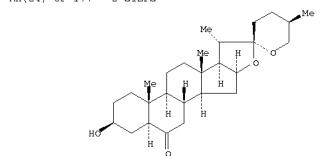


RX(23) OF 177 - 2 STEPS

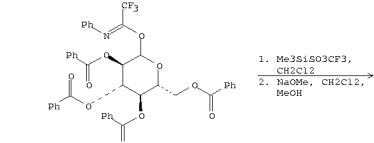


NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used  
CON: STEP(1) room temperature  
STEP(2) room temperature

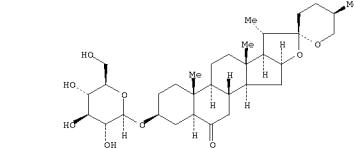
RX(24) OF 177 - 2 STEPS



RX(24) OF 177 - 2 STEPS

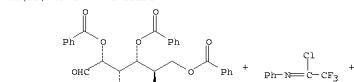


RX(24) OF 177 - 2 STEPS

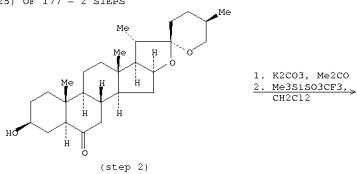


NOTE: 1) stereoselective, mol. sieves used, 2) stereoselective  
CON: STEP(1) room temperature  
STEP(2.1) 2 hours, room temperature; pH 7

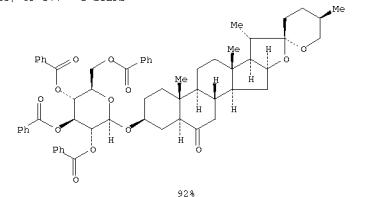
RX(25) OF 177 - 2 STEPS



RX(25) OF 177 - 2 STEPS

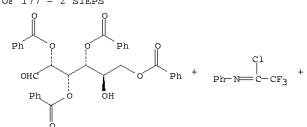


RX(25) OF 177 - 2 STEPS

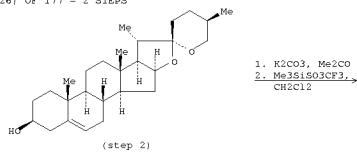


NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used  
CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature

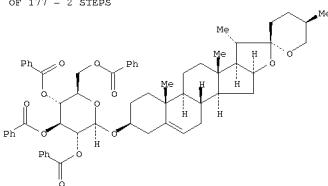
RX(26) OF 177 - 2 STEPS



RX(26) OF 177 - 2 STEPS



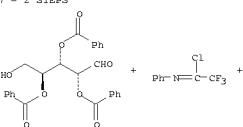
RX(26) OF 177 - 2 STEPS



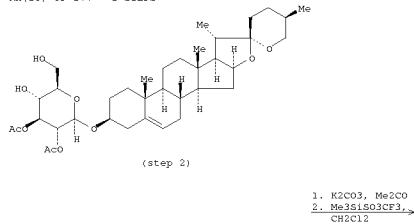
NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used  
CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature

RX(27) OF 177 - REACTION DIAGRAM NOT AVAILABLE

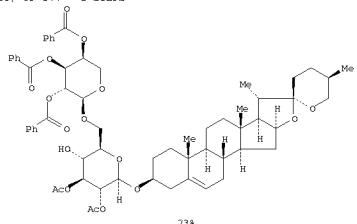
RX(28) OF 177 - 2 STEPS



RX(28) OF 177 - 2 STEPS



RX(28) OF 177 - 2 STEPS



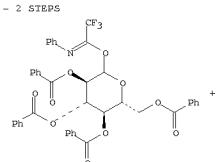
NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used  
CON: STEP(1) 3 hours, room temperature  
STEP(2) -78 - room temperature deg C

RX(29) OF 177 - REACTION DIAGRAM NOT AVAILABLE

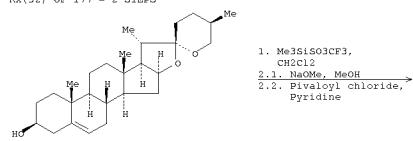
RX(30) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(31) OF 177 - REACTION DIAGRAM NOT AVAILABLE

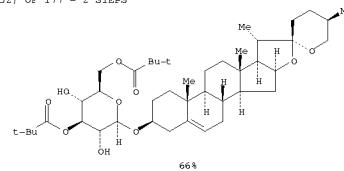
RX(32) OF 177 - 2 STEPS



RX(32) OF 177 - 2 STEPS



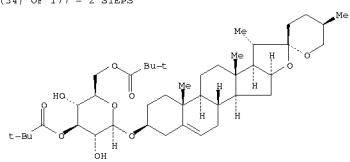
RX(32) OF 177 - 2 STEPS



NOTE: 1) stereoselective, mol. sieves used, 2) stereoselective  
CON: STEP(1) room temperature  
STEP(2.1) room temperature  
STEP(2.2) 0 deg C

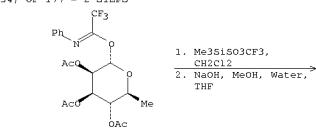
RX(33) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(34) OF 177 - 2 STEPS

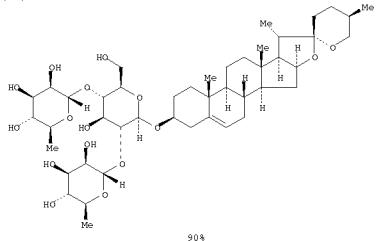


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(34) OF 177 - 2 STEPS

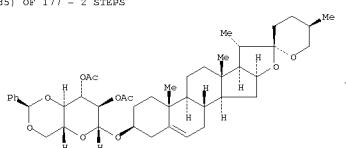


RX(34) OF 177 - 2 STEPS



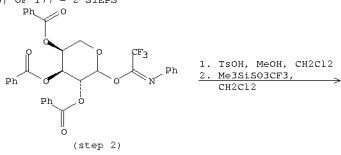
NOTE: 1) stereoselective, mol. sieves used, 2) stereoselective  
CON: STEP(1) room temperature  
STEP(2) overnight, 40 deg C

RX(35) OF 177 - 2 STEPS

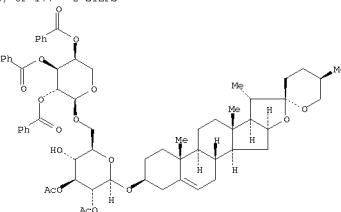


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(35) OF 177 - 2 STEPS



RX(35) OF 177 - 2 STEPS

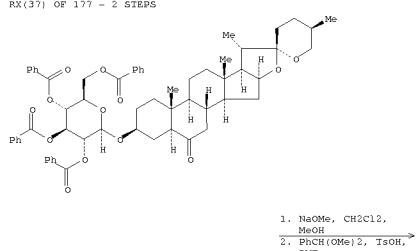


NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used  
CON: STEP(1) room temperature  
STEP(2) -78 - room temperature deg C

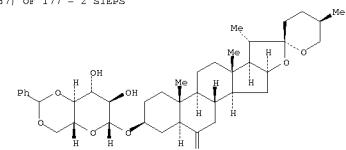
RX(36) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(37) OF 177 - 2 STEPS



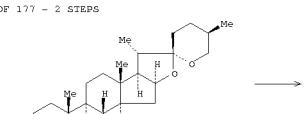
RX(37) OF 177 - 2 STEPS



NOTE: 1) stereoselective, 2) stereoselective  
CON: STEP(1.1) 2 hours, room temperature; pH 7  
STEP(2) 3 hours, 50 deg C, pH 3 - 4

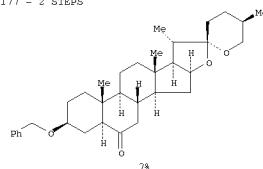
RX(38) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(39) OF 177 - 2 STEPS



16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

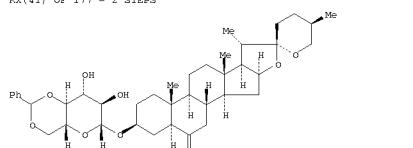
RX(39) OF 177 - 2 STEPS



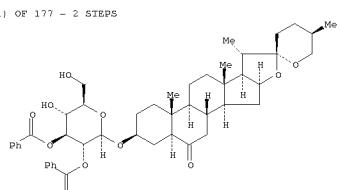
NOTE: 1) stereoselective, 2) stereoselective  
CON: STEP(1.1) 1 hour, room temperature  
STEP(2.1) 12 hours, room temperature; room temperature  $\rightarrow$  reflux  
STEP(2.2) overnight, room temperature  
STEP(2.4) 5 hours, room temperature

RX(40) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(41) OF 177 - 2 STEPS



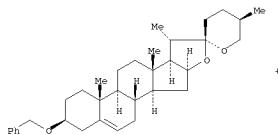
RX(41) OF 177 - 2 STEPS



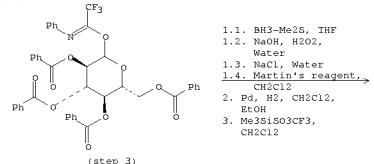
NOTE: 1) stereoselective, 2) stereoselective  
CON: STEP(1.1) 1 hour, room temperature  
STEP(2) 2.5 hours, reflux

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)  
RX(42) OF 177 - REACTION DIAGRAM NOT AVAILABLE

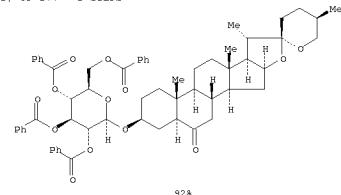
RX(43) OF 177 - 3 STEPS



RX(43) OF 177 - 3 STEPS

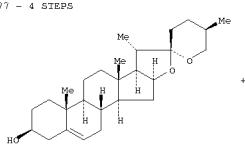


RX(43) OF 177 - 3 STEPS

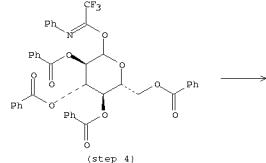


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, mol. sieves used  
CON: STEP(1.1) 12 hours, room temperature  
STEP(1.2) overnight, room temperature; pH 7  
STEP(1.4) 5 hours, room temperature  
STEP(2) room temperature  
STEP(3) room temperature

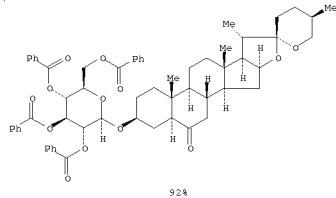
16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)  
RX(44) OF 177 - 4 STEPS



RX(44) OF 177 - 4 STEPS



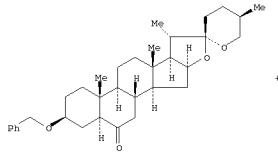
RX(44) OF 177 - 4 STEPS



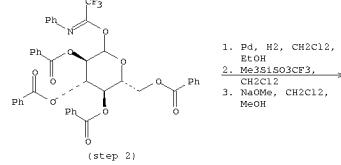
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, mol. sieves used  
CON: STEP(1.1) 12 hours, room temperature  
STEP(1.2) 2 hours, room temperature; room temperature -> reflux  
STEP(2.1) 12 hours, room temperature  
STEP(2.2) 5 hours, room temperature; pH 7  
STEP(2.4) 5 hours, room temperature  
STEP(3) room temperature  
STEP(4) room temperature

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

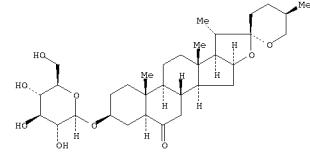
RX(45) OF 177 - 3 STEPS



RX(45) OF 177 - 3 STEPS



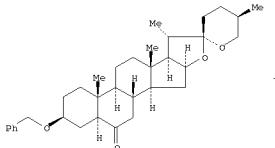
RX(45) OF 177 - 3 STEPS



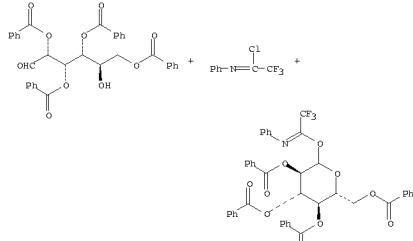
NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3) stereoselective  
CON: STEP(1) room temperature  
STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

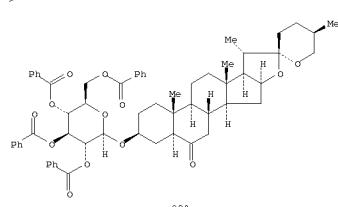
RX(46) OF 177 - 3 STEPS



RX(46) OF 177 - 3 STEPS



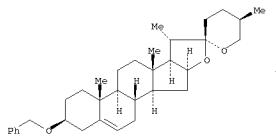
RX(46) OF 177 - 3 STEPS  
converging



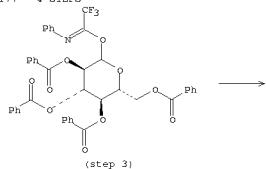
16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

NOTE: stereoselective, stereoselective, mol. sieves used, stereoselective  
 CON: STEP(1) room temperature  
 STEP(2) room temperature  
 STEP(3) 3 hours, room temperature

RX(47) OF 177 - 4 STEPS



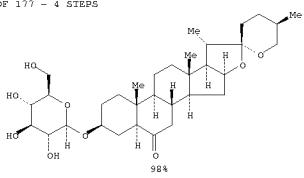
RX(47) OF 177 - 4 STEPS



RX(48) OF 177 - 4 STEPS

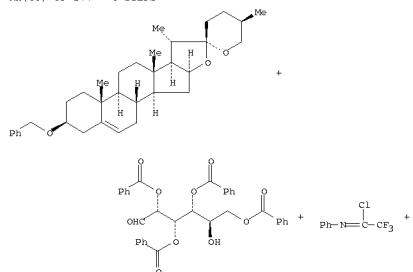
16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(47) OF 177 - 4 STEPS



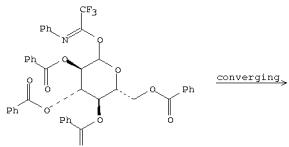
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, mol. sieves used, 4) stereoselective  
 CON: STEP(1.1) 12 hours, room temperature  
 STEP(1.2) overnight, room temperature; pH 7  
 STEP(1.4) 5 hours, room temperature  
 STEP(2) room temperature  
 STEP(3) room temperature  
 STEP(4.1) 2 hours, room temperature; pH 7

RX(48) OF 177 - 4 STEPS

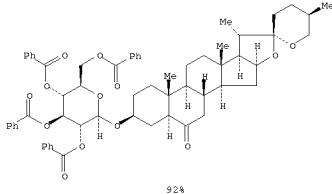


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(48) OF 177 - 4 STEPS

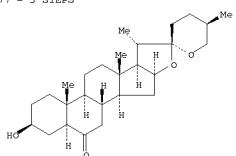


RX(48) OF 177 - 4 STEPS



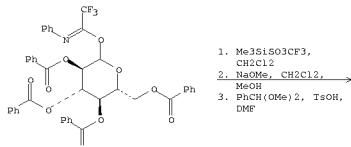
NOTE: stereoselective, stereoselective, stereoselective, mol. sieves used, stereoselective  
 CON: STEP(1.1) 12 hours, room temperature  
 STEP(1.2) overnight, room temperature; pH 7  
 STEP(2) room temperature  
 STEP(3) room temperature  
 STEP(4) 3 hours, room temperature

RX(49) OF 177 - 3 STEPS

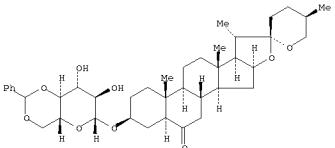


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(49) OF 177 - 3 STEPS

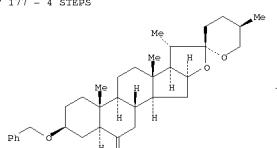


RX(49) OF 177 - 3 STEPS

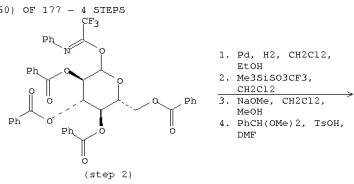


NOTE: 1) stereoselective, mol. sieves used, 2) stereoselective, 3) stereoselective  
 CON: STEP(1) room temperature  
 STEP(2.1) 2 hours, room temperature; pH 7  
 STEP(3) 3 hours, 50 deg C, pH 3 - 4

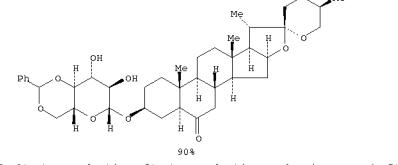
RX(50) OF 177 - 4 STEPS



## RX(50) OF 177 - 4 STEPS

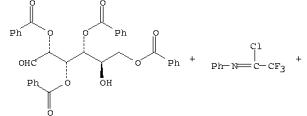


## RX(50) OF 177 - 4 STEPS

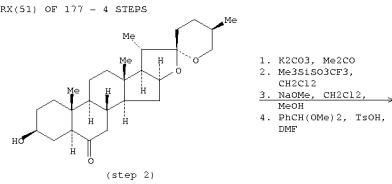


NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3) stereoselective, 4) stereoselective  
CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7  
STEP(4) 3 hours, 50 deg C, pH 3 - 4

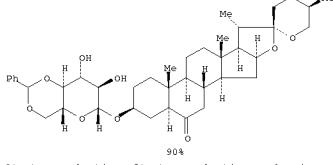
## RX(51) OF 177 - 4 STEPS



## RX(51) OF 177 - 4 STEPS

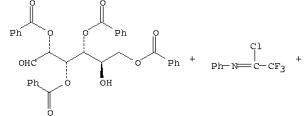


## RX(51) OF 177 - 4 STEPS

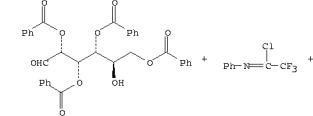


NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3) stereoselective, 4) stereoselective  
CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7  
STEP(4) 3 hours, 50 deg C, pH 3 - 4

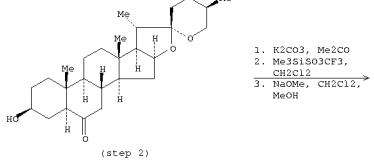
## RX(52) OF 177 - 4 STEPS



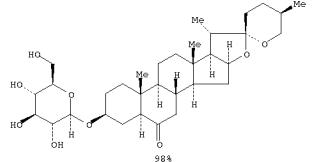
## RX(52) OF 177 - 3 STEPS



## RX(52) OF 177 - 3 STEPS

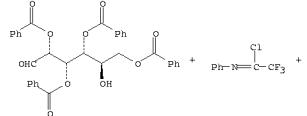


## RX(52) OF 177 - 3 STEPS

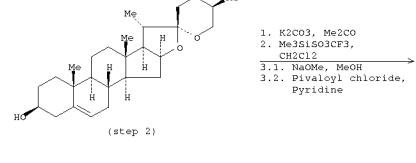


NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3) stereoselective  
CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7

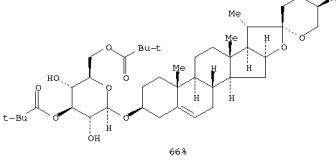
## RX(53) OF 177 - 3 STEPS



## RX(53) OF 177 - 3 STEPS



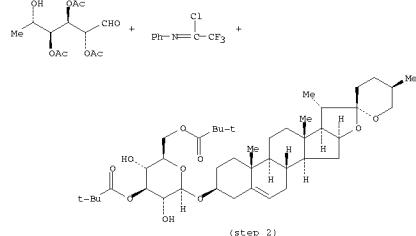
## RX(53) OF 177 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3) stereoselective  
CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature  
STEP(3.1) room temperature  
STEP(3.2) 0 deg C

## RX(54) OF 177 - REACTION DIAGRAM NOT AVAILABLE

## RX(55) OF 177 - 3 STEPS

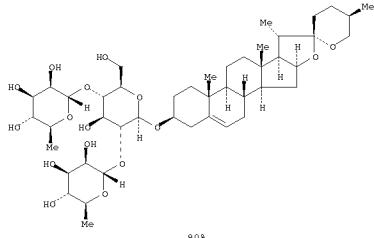


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(55) OF 177 - 3 STEPS

1. K<sub>2</sub>CO<sub>3</sub>, Me<sub>2</sub>CO  
 2. Me<sub>3</sub>SiOSO<sub>2</sub>CF<sub>3</sub>,  
 CH<sub>2</sub>Cl<sub>2</sub>  
 3. NaOH, MeOH, Water,  
 THF

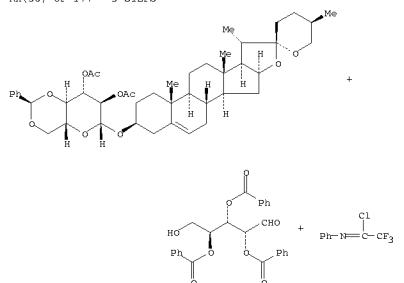
RX(55) OF 177 - 3 STEPS



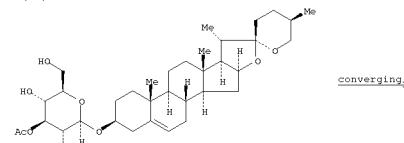
NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3)  
 stereoselective  
 CON: STEP(1) 3 hours, room temperature  
 STEP(2) room temperature  
 STEP(3) overnight, 40 deg C

16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(56) OF 177 - 3 STEPS

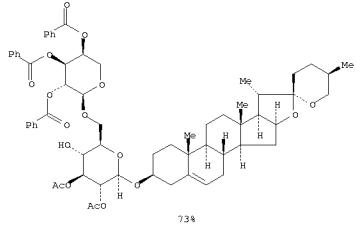


RX(56) OF 177 - 3 STEPS



16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(56) OF 177 - 3 STEPS



NOTE: stereoselective, stereoselective, mol. sieves used,  
 stereoselective  
 CON: STEP(1) 3 hours, room temperature  
 STEP(2) -78 - room temperature deg C  
 STEP(3) room temperature

RX(57) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(58) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(59) OF 177 - REACTION DIAGRAM NOT AVAILABLE

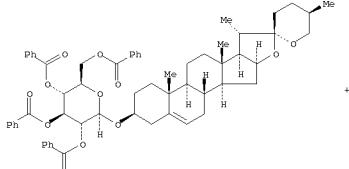
RX(60) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(61) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(62) OF 177 - REACTION DIAGRAM NOT AVAILABLE

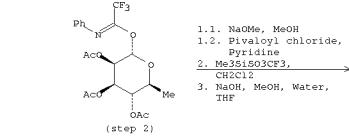
RX(63) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(64) OF 177 - 3 STEPS

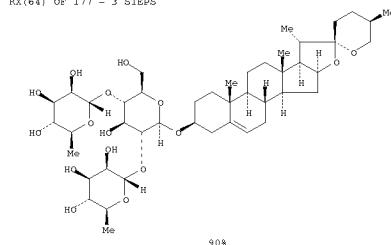


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(64) OF 177 - 3 STEPS



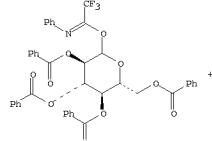
RX(64) OF 177 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3)  
 stereoselective  
 CON: STEP(1,1) room-temperature  
 STEP(1,2) -78 - deg C  
 STEP(2) room temperature  
 STEP(3) overnight, 40 deg C

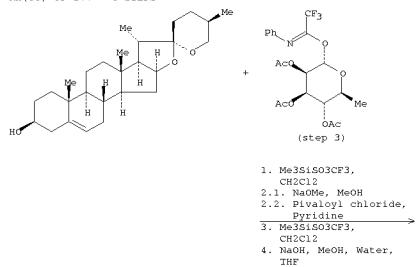
RX(65) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(66) OF 177 - 4 STEPS

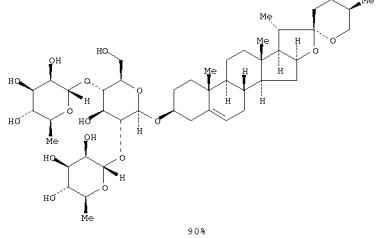


16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(66) OF 177 - 4 STEPS



RX(66) OF 177 - 4 STEPS



NOTE: 1) stereoselective, mol. sieves used, 2) stereoselective, 3)

stereoselective, mol. sieves used, 4) stereoselective

CON: STEP(1) room temperature

STEP(2) 1) room temperature

2) 0 deg C

3) room temperature

STEP(4) overnight, 40 deg C

RX(67) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(68) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(69) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

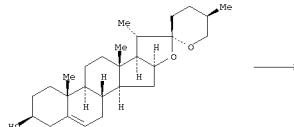
RX(70) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(71) OF 177 - REACTION DIAGRAM NOT AVAILABLE

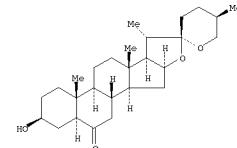
RX(72) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(73) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(74) OF 177 - 3 STEPS



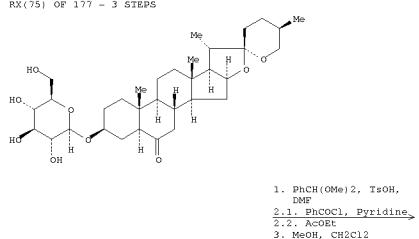
RX(74) OF 177 - 3 STEPS



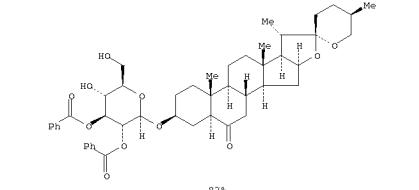
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective  
CON: STEP(1.1) 1 hour, room temperature  
STEP(1.2) 2 hours, room temperature; room temperature  $\rightarrow$  reflux  
STEP(2.1) 1 hour, room temperature  
STEP(2.2) overnight, room temperature; pH 7  
STEP(2.4) 5 hours, room temperature  
STEP(3) room temperature

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(75) OF 177 - 3 STEPS



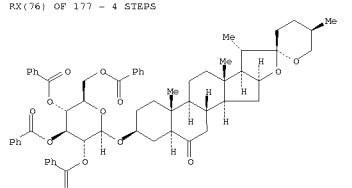
RX(75) OF 177 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective  
CON: STEP(1) 3 hours, 50 deg C, pH 3 - 4  
STEP(2.1) 1 hour, room temperature  
STEP(3) 2.5 hours, reflux

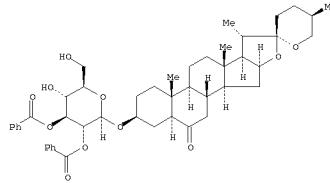
16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(76) OF 177 - 4 STEPS



1.  $\text{NaOMe}$ ,  $\text{CH}_2\text{Cl}_2$ ,  
 $\text{MeOH}$   
2.  $\text{PhCH(OMe)}_2$ ,  $\text{TsOH}$ ,  
 $\text{DMP}$   
3.1.  $\text{PhCOCl}$ ,  $\text{Pyridine}$   
3.2.  $\text{AcOEt}$   
4.  $\text{MeOH}$ ,  $\text{CH}_2\text{Cl}_2$

RX(76) OF 177 - 4 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective  
CON: STEP(1.1) 2 hours, room temperature; pH ?  
STEP(2) 3 hours, 50 deg C, pH 3 - 4  
STEP(3.1) 1 hour, room temperature  
STEP(4) 2.5 hours, reflux

RX(77) OF 177 - REACTION DIAGRAM NOT AVAILABLE

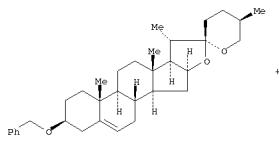
RX(78) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(79) OF 177 - REACTION DIAGRAM NOT AVAILABLE

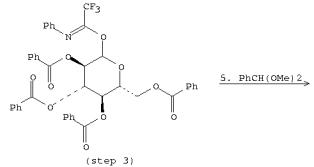
RX(80) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(81) OF 177 - REACTION DIAGRAM NOT AVAILABLE

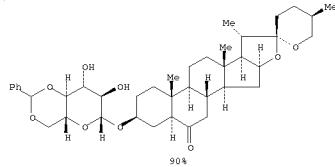
RX(82) OF 177 - 5 STEPS



RX(82) OF 177 - 5 STEPS

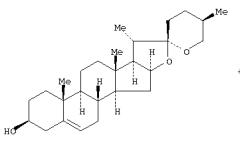


RX(82) OF 177 - 5 STEPS

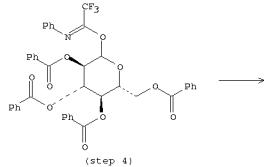


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, mol. sieves used, 4) stereoselective, 5) stereoselective  
CON: STEP(1.1) 12 hours, room temperature  
STEP(1.2) overnight, room temperature; pH 7  
STEP(1.3) 5 hours, room temperature  
STEP(1.4) 12 hours, room temperature  
STEP(2.1) 2 hours, room temperature; pH 7  
STEP(2.2) overnight, room temperature  
STEP(3) 3 hours, room temperature  
STEP(4.1) 2 hours, room temperature; pH 7  
STEP(5) 3 hours, 90 deg C, pH 3 - 4

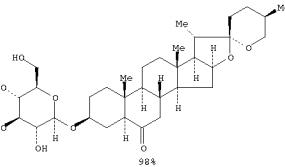
RX(83) OF 177 - 5 STEPS



RX(83) OF 177 - 5 STEPS

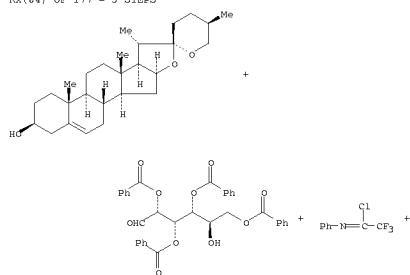


RX(83) OF 177 - 5 STEPS

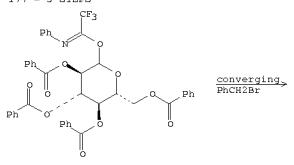


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, mol. sieves used, 5) stereoselective  
CON: STEP(1.1) 12 hours, room temperature  
STEP(1.2) 2 hours, room temperature; room temperature -> reflux  
STEP(2.1) 12 hours, room temperature  
STEP(2.2) overnight, room temperature; pH 7  
STEP(3) 3 hours, room temperature  
STEP(4) room temperature  
STEP(5.1) 2 hours, room temperature; pH 7

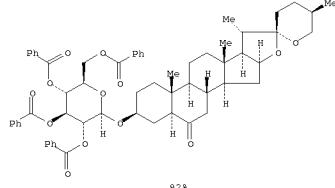
RX(84) OF 177 - 5 STEPS



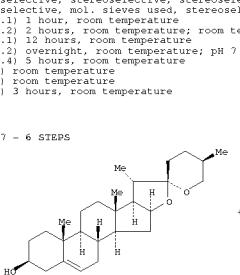
RX(84) OF 177 - 5 STEPS



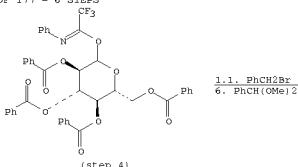
RX(84) OF 177 - 5 STEPS



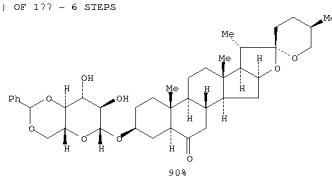
RX(85) OF 177 - 6 STEPS



RX(85) OF 177 - 6 STEPS



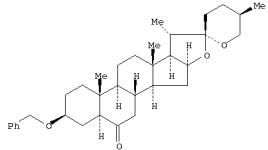
RX(85) OF 177 - 6 STEPS



16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

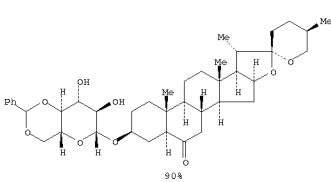
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, mol. sieves used, 5) stereoselective, 6) stereoselective  
 CON: STEP(1) room temperature  
 STEP(1.1) 2 hours, room temperature; room temperature -> reflux  
 STEP(2.1) 12 hours, room temperature  
 STEP(2.2) overnight, room temperature; pH 7  
 STEP(3) 1 hour, room temperature  
 STEP(3) room temperature  
 STEP(4) room temperature  
 STEP(5.1) 2 hours, room temperature; pH 7  
 STEP(6) 3 hours, 50 deg C, pH 3 - 4

RX(86) OF 177 - 5 STEPS



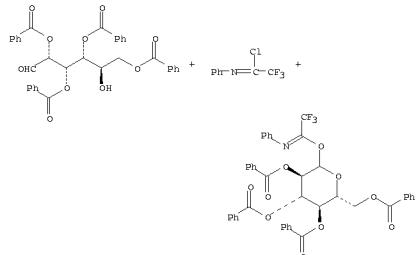
16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

NOTE: converging, PhCH<sub>2</sub>O(Me)<sub>2</sub>  
 converging ->

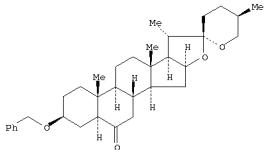


NOTE: stereoselective, stereoselective, mol. sieves used, stereoselective  
 CON: STEP(1) room temperature  
 STEP(2) room temperature  
 STEP(3.1) 2 hours, room temperature; pH 7  
 STEP(4) 3 hours, 50 deg C, pH 3 - 4  
 STEP(5) 3 hours, room temperature

RX(86) OF 177 - 5 STEPS

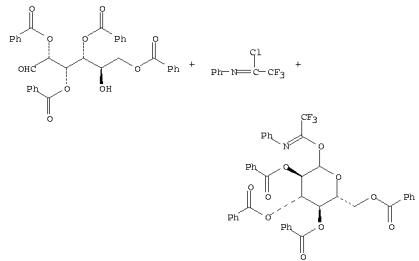


RX(87) OF 177 - 4 STEPS



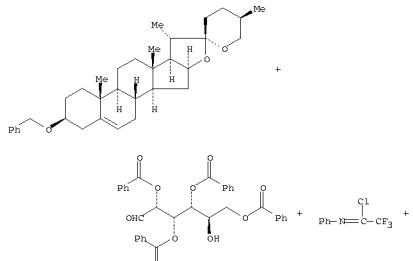
16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(87) OF 177 - 4 STEPS

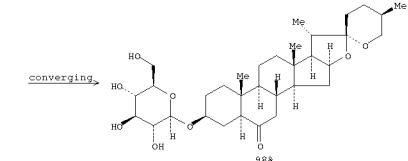


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(89) OF 177 - 6 STEPS



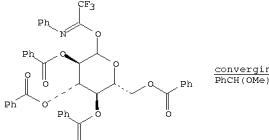
RX(87) OF 177 - 4 STEPS



NOTE: stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective, mol. sieves used, stereoselective  
 CON: STEP(1) room temperature  
 STEP(2) room temperature  
 STEP(3.1) 2 hours, room temperature; pH 7  
 STEP(4) 3 hours, room temperature

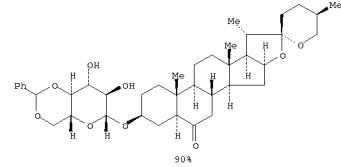
RX(88) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(89) OF 177 - 6 STEPS



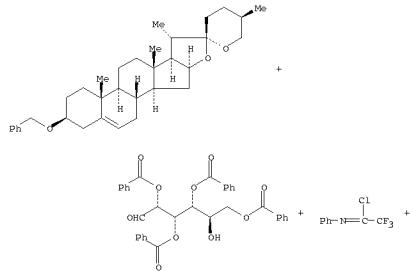
16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(89) OF 177 - 6 STEPS



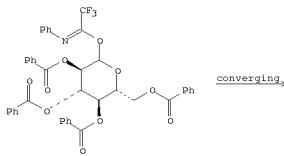
NOTE: stereoselective, stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective, stereoselective  
 CON: STEP(1.1) 12 hours, room temperature  
 STEP(1.2) overnight, room temperature; pH 7  
 STEP(1.4) 5 hours, room temperature  
 STEP(2) room temperature  
 STEP(3) 2 hours, room temperature  
 STEP(4.1) 2 hours, room temperature; pH 7  
 STEP(5) 3 hours, 50 deg C, pH 3 - 4  
 STEP(6) 3 hours, room temperature

RX(90) OF 177 - 5 STEPS

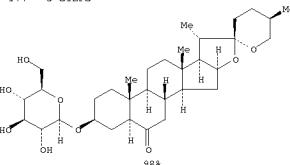


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(90) OF 177 - 5 STEPS



RX(90) OF 177 - 5 STEPS

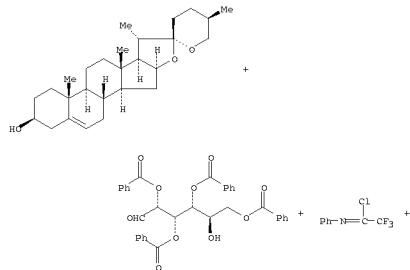


NOTE: stereoselective, stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective  
 CON: STEP(1.1) 12 hours, room temperature  
 STEP(1.2) overnight, room temperature; pH 7  
 STEP(1.4) 5 hours, room temperature  
 STEP(2) room temperature  
 STEP(3) room temperature  
 STEP(4.1) 2 hours, room temperature; pH 7  
 STEP(5) 3 hours, room temperature

RX(91) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(92) OF 177 - 7 STEPS

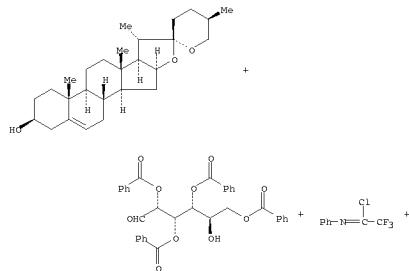


16 ANSWER 3 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

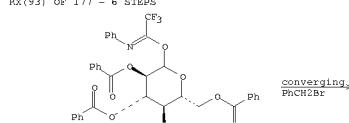
RX(92) OF 177 - 7 STEPS

NOTE: stereoselective, stereoselective, stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective  
 CON: STEP(1.1) 1 hour, room temperature  
 STEP(1.2) 12 hours, room temperature; room temperature -> reflux  
 STEP(2.1) 12 hours, room temperature  
 STEP(2.2) overnight, room temperature; pH 7  
 STEP(3.4) 5 hours, room temperature  
 STEP(3) room temperature  
 STEP(4) room temperature  
 STEP(5.1) 2 hours, room temperature; pH 7  
 STEP(6) 3 hours, 50 deg C, pH 3 - 4  
 STEP(7) 3 hours, room temperature

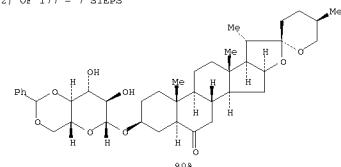
RX(93) OF 177 - 6 STEPS



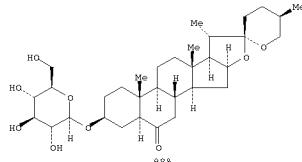
RX(93) OF 177 - 6 STEPS



RX(92) OF 177 - 7 STEPS



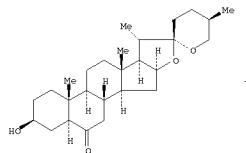
RX(93) OF 177 - 6 STEPS



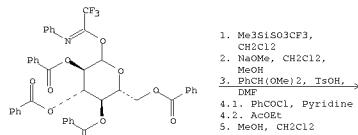
NOTE: stereoselective, stereoselective, stereoselective, stereoselective, mol. sieves used, stereoselective, CON: STEP(1.1) 1 hour, room temperature  
STEP(1.2) 12 hours, room temperature; room temperature -> reflux  
STEP(2.1) overnight, room temperature; pH 7  
STEP(2.2) 5 hours, room temperature  
STEP(3) room temperature  
STEP(4) room temperature  
STEP(5.1) 2 hours, room temperature; pH 7  
STEP(6) 3 hours, room temperature

RX(94) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(95) OF 177 - 5 STEPS

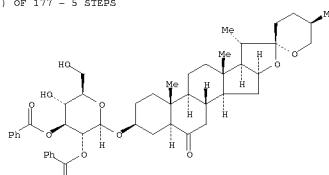


RX(95) OF 177 - 5 STEPS



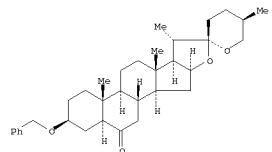
1. Me3SiSO3CF3,  
CH2Cl2  
2. NaOMe, CH2Cl2,  
MeOH  
3. PhCH(OMe)2, TsOH, →  
DMF  
4.1. PhCOCl, Pyridine  
4.2. AcOEt  
5. MeOH, CH2Cl2

RX(95) OF 177 - 5 STEPS



NOTE: 1) stereoselective, mol. sieves used, 2) stereoselective, 3)  
stereoselective, 4) stereoselective, 5) stereoselective  
CON: STEP(1) room temperature  
STEP(2.1) 2 hours, room temperature; pH 7  
STEP(2.2) 5 hours, 50 deg C, pH 3 - 4  
STEP(4.1) 2 hours, room temperature  
STEP(5) 2.5 hours, reflux

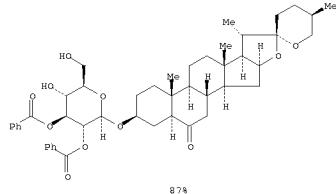
RX(96) OF 177 - 6 STEPS



RX(96) OF 177 - 6 STEPS  
(step 2)

RX(98) OF 177 - 6 STEPS  
(step 2)

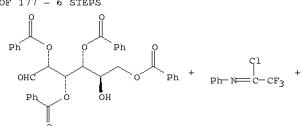
RX(97) OF 177 - 6 STEPS



NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3)  
stereoselective, 4) stereoselective, 5) stereoselective, 6)  
stereoselective  
CON: STEP(1) room temperature  
STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7  
STEP(3.2) 2 hours, 50 deg C, pH 3 - 4  
STEP(4.1) 1 hour, room temperature  
STEP(6) 2.5 hours, reflux

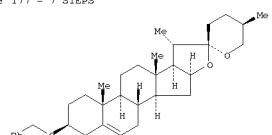
RX(97) OF 177 - REACTION DIAGRAM NOT AVAILABLE

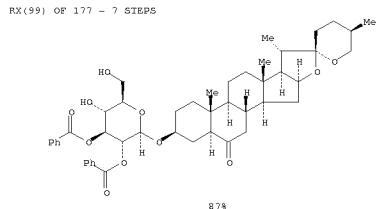
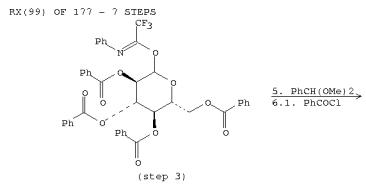
RX(98) OF 177 - 6 STEPS



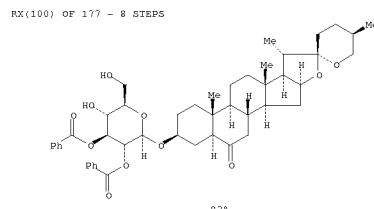
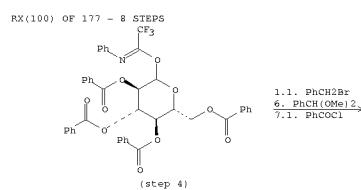
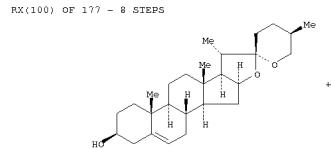
NOTE: 1) stereoselective, 2) stereoselective, mol. sieves used, 3)  
stereoselective, 4) stereoselective, 5) stereoselective, 6)  
stereoselective  
CON: STEP(1) room temperature  
STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7  
STEP(3.2) 2 hours, 50 deg C, pH 3 - 4  
STEP(5.1) 1 hour, room temperature  
STEP(6) 2.5 hours, reflux

RX(99) OF 177 - 7 STEPS



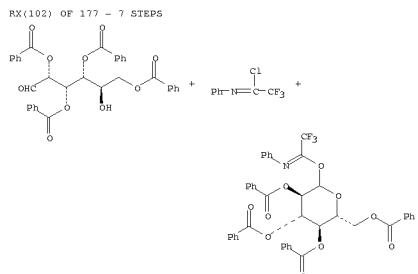
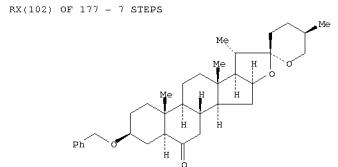


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, mol. sieves used, 4) stereoselective, 5) stereoselective, 6) stereoselective, 7) stereoselective, 8) stereoselective  
CON: STEP(1) 12 hours, room temperature  
STEP(1.1) overnight, room temperature  
STEP(1.2) 5 hours, room temperature  
STEP(1.3) 5 hours, room temperature  
STEP(1.4) 2 hours, room temperature; pH 7  
STEP(5) 3 hours, 50 deg C, pH 3 - 4  
STEP(6.1) 1 hour, room temperature  
STEP(7) 2.5 hours, reflux

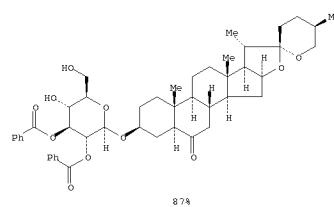


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective, 7) stereoselective, 8) stereoselective  
CON: STEP(1.1) 1 hour, room temperature  
STEP(1.2) 12 hours, room temperature -> reflux  
STEP(2.1) 12 hours, room temperature  
STEP(2.2) overnight, room temperature; pH 7  
STEP(2.3) 5 hours, room temperature  
STEP(2.4) 2 hours, room temperature; pH 7  
STEP(3) 2 hours, room temperature; pH 7  
STEP(4) 3 hours, 50 deg C, pH 3 - 4  
STEP(5.1) 1 hour, room temperature  
STEP(6) 2.5 hours, reflux

RX(101) OF 177 - REACTION DIAGRAM NOT AVAILABLE

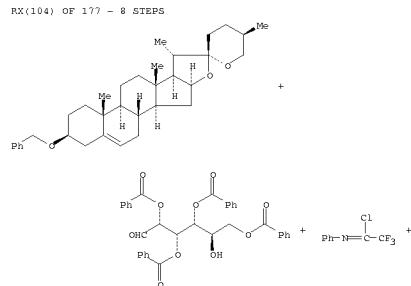


RX(102) OF 177 - 7 STEPS  
converging  
 $\text{PhCH}(\text{OMe})_2 \rightarrow \text{PhCOCl}$



NOTE: stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective, stereoselective, stereoselective  
CON: STEP(2) room temperature  
STEP(3.1) 2 hours, room temperature; pH 7  
STEP(3.2) 1 hour, 50 deg C, pH 3 - 4  
STEP(5.1) 1 hour, room temperature  
STEP(6) 2.5 hours, reflux  
STEP(7) 3 hours, room temperature

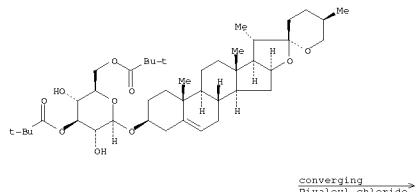
RX(103) OF 177 - REACTION DIAGRAM NOT AVAILABLE



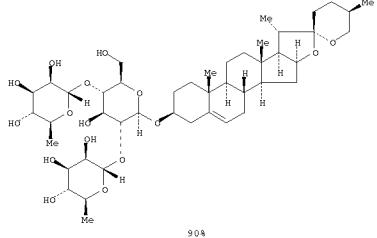


16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(108) OF 177 - 5 STEPS



RX(108) OF 177 - 5 STEPS



NOTE: stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective, mol. sieves used, stereoselective

CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature  
STEP(3) overnight, 0 deg C  
STEP(4) room temperature  
STEP(5,1) room temperature  
STEP(5,2) 0 deg C

RX(109) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(110) OF 177 - REACTION DIAGRAM NOT AVAILABLE

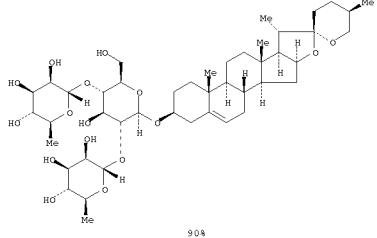
RX(111) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(112) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(113) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(116) OF 177 - 6 STEPS



NOTE: stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective

CON: STEP(1) 3 hours, room temperature  
STEP(2) room temperature  
STEP(3,1) room temperature  
STEP(3,2) 0 deg C  
STEP(4) room temperature  
STEP(5) overnight, 40 deg C  
STEP(6) 3 hours, room temperature

RX(117) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(118) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(119) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(120) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(121) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(122) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(123) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(124) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(125) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(126) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(127) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(128) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(129) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(130) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(131) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(132) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(133) OF 177 - REACTION DIAGRAM NOT AVAILABLE

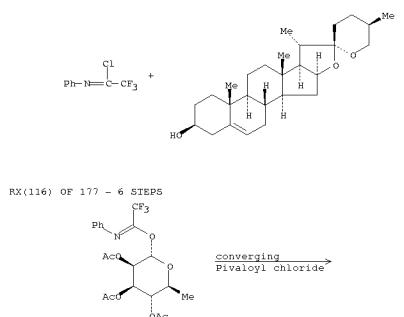
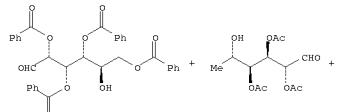
RX(134) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

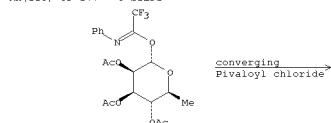
RX(114) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(115) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(116) OF 177 - 6 STEPS



RX(116) OF 177 - 6 STEPS



16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(135) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(136) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(137) OF 177 - REACTION DIAGRAM NOT AVAILABLE

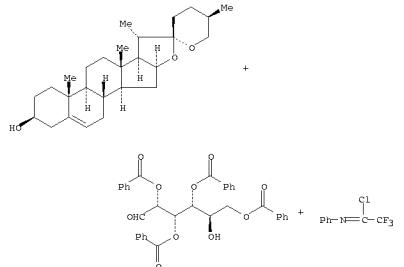
RX(138) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(139) OF 177 - REACTION DIAGRAM NOT AVAILABLE

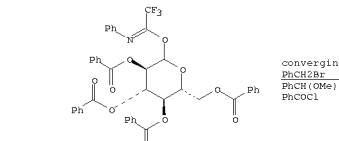
RX(140) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(141) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(142) OF 177 - 9 STEPS

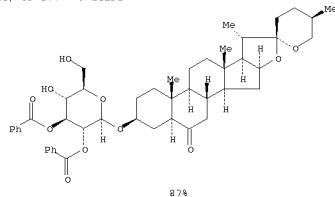


RX(142) OF 177 - 9 STEPS



16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(142) OF 177 - 9 STEPS



NOTE: stereoselective, stereoselective, stereoselective, stereoselective, mol. sieves used, stereoselective, stereoselective, stereoselective, stereoselective, stereoselective,

CON: STEP(1:1) 1 hour, room temperature  
STEP(1:2) 2 hours, room temperature; room temperature -> reflux  
STEP(2:1) 12 hours, room temperature  
STEP(2:2) 1 hour, room temperature; pH 7  
STEP(2:4) 5 hours, room temperature  
STEP(3) room temperature  
STEP(4) room temperature  
STEP(5:1) 2 hours, room temperature; pH 7  
STEP(6) 3 hours, 50 deg C, pH 3 - 4  
STEP(7:1) 1 hour, room temperature  
STEP(8) 2.5 hours, reflux  
STEP(9) 3 hours, room temperature

RX(143) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(144) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(145) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(146) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(147) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(148) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(149) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(150) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(151) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(152) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(153) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(154) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(155) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(156) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(157) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 3 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(158) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(159) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(160) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(161) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(162) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(163) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(164) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(165) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(166) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(167) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(168) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(169) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(170) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(171) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(172) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(173) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(174) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(175) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(176) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(177) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RE.CN2 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(143) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(144) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(145) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(146) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(147) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(148) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(149) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(150) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(151) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(152) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(153) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(154) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(155) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(156) OF 177 - REACTION DIAGRAM NOT AVAILABLE

RX(157) OF 177 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 4 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 137:353212 CASREACT  
TI An Assisted Solvolysis of 23-Spirostanyl Bromides and Tosylates. A New Rearrangement of Spirostanes to the Bisfuran Systems

AU Antoniewicz-Rutkowska, Romana; Jastrzebska, Izabella; Morzycki, Jacek W.; Majewski, Jacek

CS Department of Chemistry, University of Warsaw, Warsaw, 02-093, Pol.

SO Journal of Organic Chemistry (2002), 67(20), 6916-6924

CODEN: JOCEAH; ISSN: 0022-3263

PB American Chemical Society

DT Journal

LA English

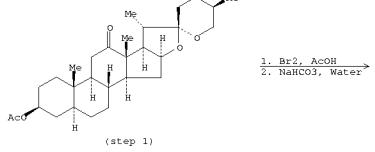
AB Steroidal sapogenins bearing a good leaving group at C23 undergo a completely stereospecific rearrangement under a variety of conditions via a mechanism involving neighboring-group participation by the acetal oxygen atom and rotation of the C23 side-chain substituent.

The reactions of equatorial (23S)-23-bromo- or (23S)-23-tosyloxyspirostanes with either the  $\alpha$ -(2SR) or  $\beta$ -(2SS) oriented 25-Me group lead to the bisfurans

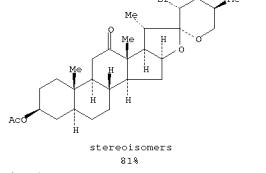
products with inversion of configuration at C23. The reactions of the starting compds with axial substituents (2R) at C23 require drastic

conditions and result in the formation of the corresponding olefin accompanied by the rearranged product (in the case of the 23S isomer only).

RX(1) OF 53



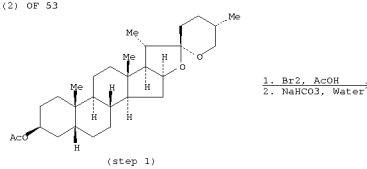
RX(1) OF 53



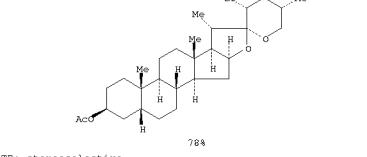
NOTE: stereoselective

16 ANSWER 4 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(2) OF 53

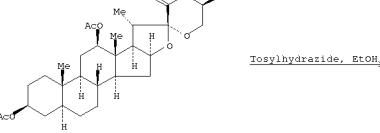


RX(2) OF 53

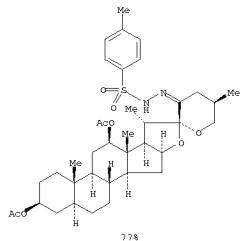


NOTE: stereoselective

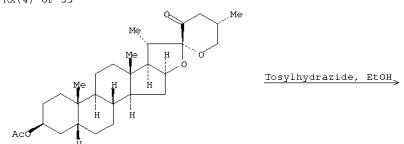
RX(3) OF 53



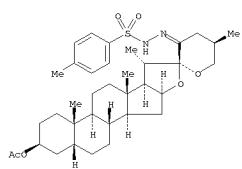
RX(3) OF 53



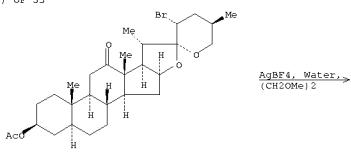
RX(4) OF 53



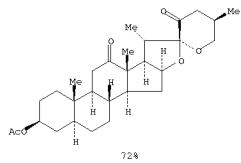
RX(4) OF 53



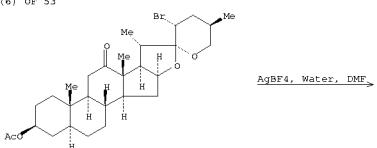
RX(5) OF 53



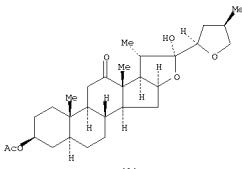
RX(5) OF 53



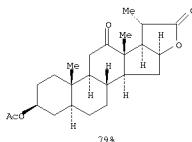
RX(6) OF 53



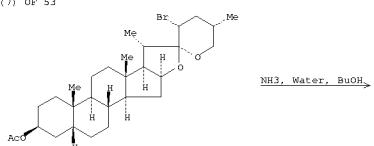
RX(6) OF 53



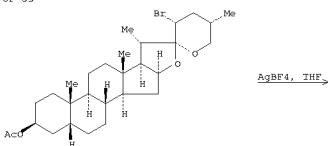
RX(8) OF 53



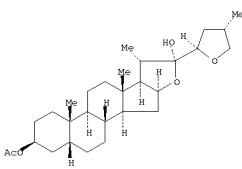
RX(7) OF 53



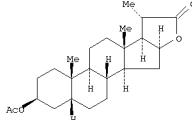
RX(9) OF 53



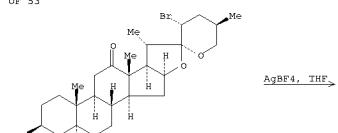
RX(7) OF 53



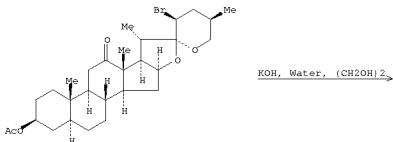
RX(9) OF 53



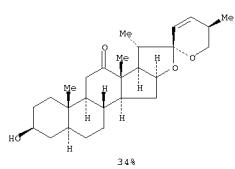
RX(8) OF 53



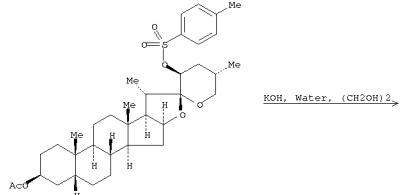
RX(10) OF 53



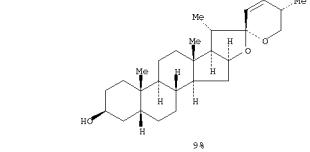
RX(10) OF 53



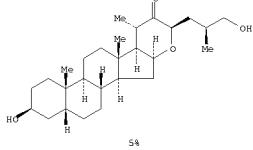
RX(11) OF 53



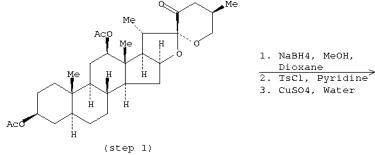
RX(11) OF 53



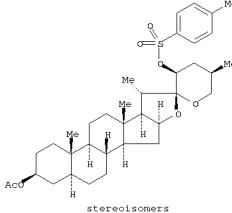
RX(11) OF 53



RX(14) OF 53

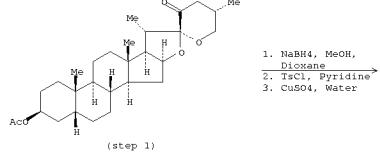


RX(14) OF 53

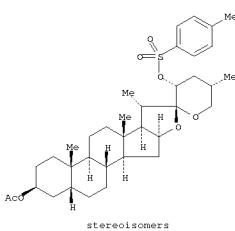


NOTE: stereoselective

RX(15) OF 53

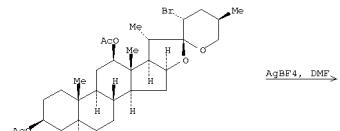


RX(15) OF 53

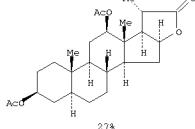


NOTE: stereoselective

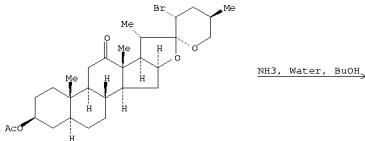
RX(16) OF 53



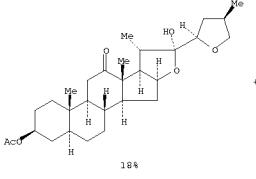
RX(16) OF 53



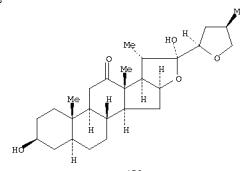
RX(17) OF 53



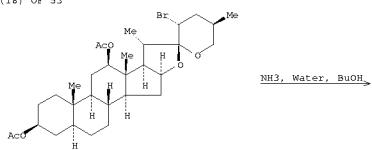
RX(17) OF 53



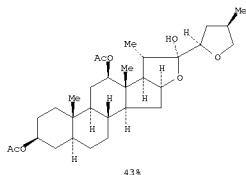
RX(17) OF 53



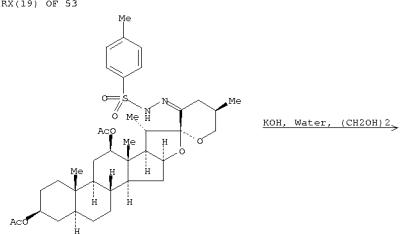
RX(18) OF 53



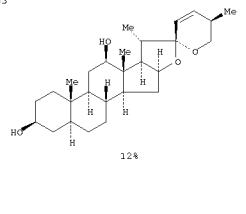
RX(18) OF 53



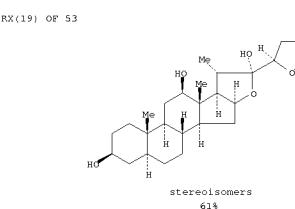
RX(19) OF 53



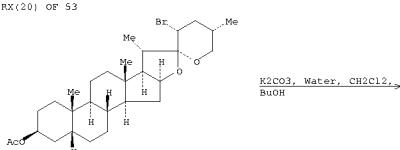
RX(19) OF 53



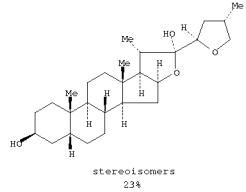
RX(19) OF 53



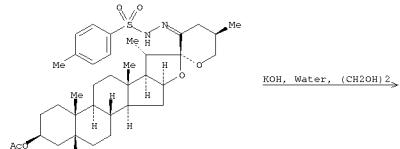
RX(20) OF 53



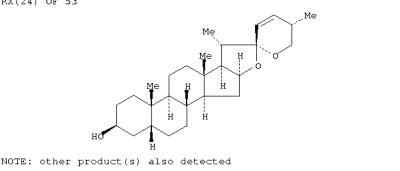
RX(20) OF 53



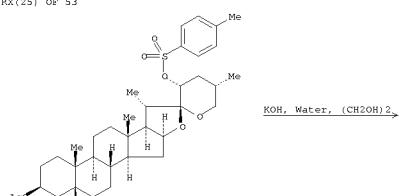
RX(24) OF 53



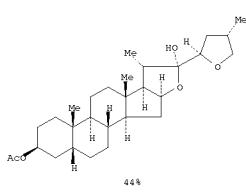
RX(24) OF 53



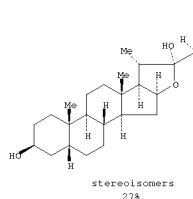
RX(25) OF 53



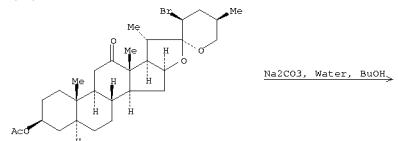
RX(22) OF 53



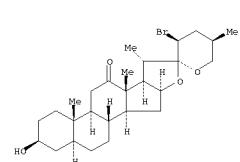
RX(25) OF 53



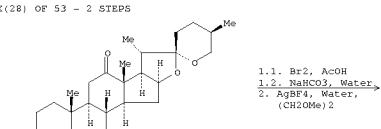
RX(26) OF 53



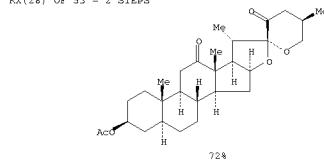
RX(26) OF 53



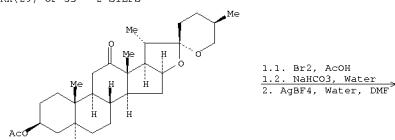
RX(28) OF 53 - 2 STEPS



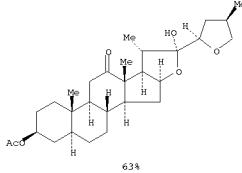
RX(28) OF 53 - 2 STEPS



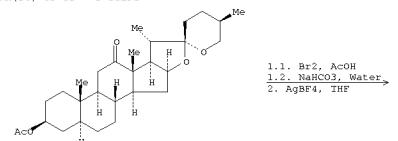
RX(29) OF 53 - 2 STEPS



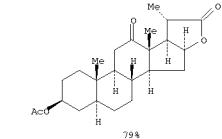
RX(29) OF 53 - 2 STEPS



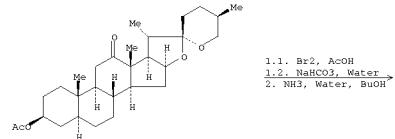
RX(30) OF 53 - 2 STEPS



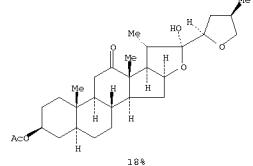
RX(30) OF 53 - 2 STEPS



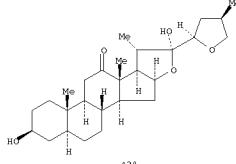
RX(31) OF 53 - 2 STEPS



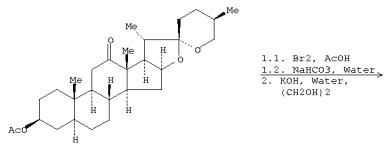
RX(31) OF 53 - 2 STEPS



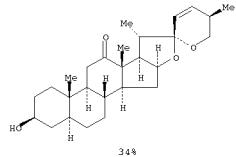
RX(31) OF 53 - 2 STEPS



RX(32) OF 53 - 2 STEPS

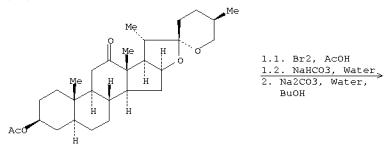


RX(32) OF 53 - 2 STEPS



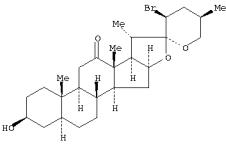
NOTE: 1) stereoselective

RX(33) OF 53 - 2 STEPS

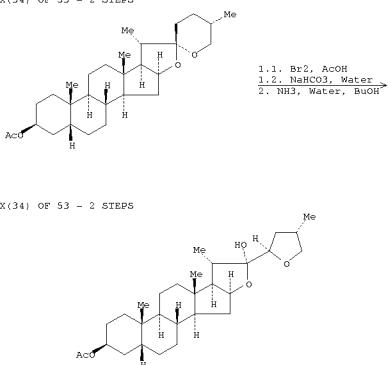


NOTE: 1) stereoselective

RX(33) OF 53 - 2 STEPS

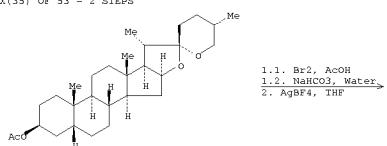


RX(34) OF 53 - 2 STEPS

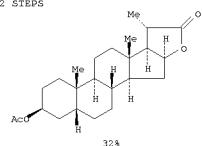


NOTE: 1) stereoselective

RX(35) OF 53 - 2 STEPS

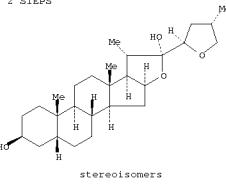


RX(35) OF 53 - 2 STEPS



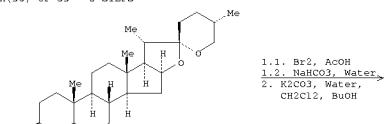
NOTE: 1) stereoselective

RX(36) OF 53 - 2 STEPS



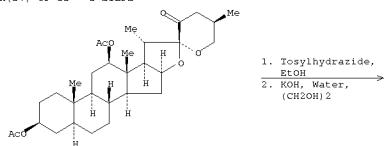
NOTE: 1) stereoselective

RX(36) OF 53 - 2 STEPS

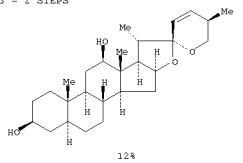


NOTE: 1) stereoselective

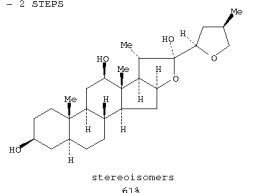
RX(37) OF 53 - 2 STEPS



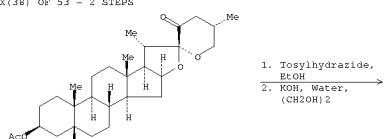
RX(37) OF 53 - 2 STEPS



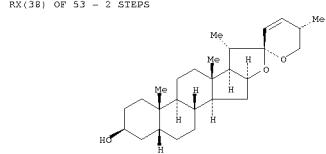
RX(37) OF 53 - 2 STEPS



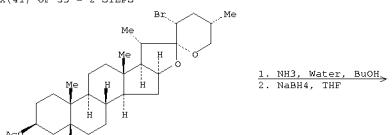
RX(38) OF 53 - 2 STEPS



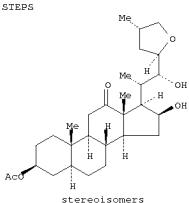
RX(39) OF 53 - 2 STEPS



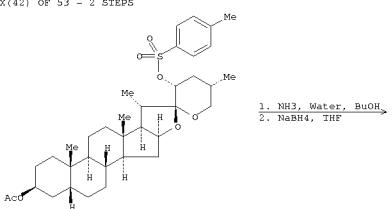
RX(41) OF 53 - 2 STEPS



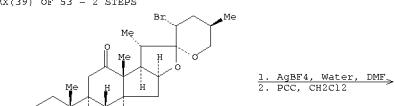
RX(41) OF 53 - 2 STEPS



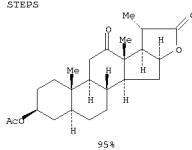
RX(42) OF 53 - 2 STEPS



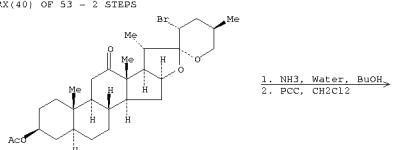
RX(39) OF 53 - 2 STEPS



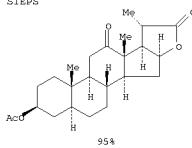
RX(39) OF 53 - 2 STEPS



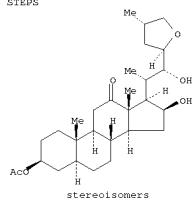
RX(40) OF 53 - 2 STEPS



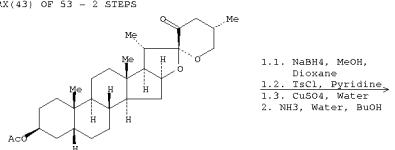
RX(40) OF 53 - 2 STEPS



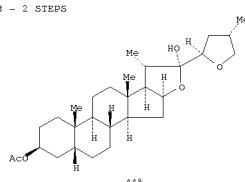
RX(42) OF 53 - 2 STEPS



RX(43) OF 53 - 2 STEPS

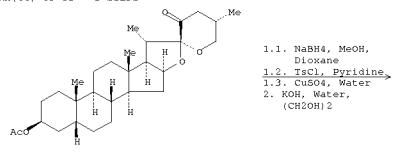


RX(43) OF 53 - 2 STEPS

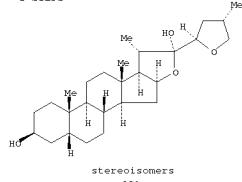


NOTE: 1) stereoselective

## RX(44) OF 53 - 2 STEPS

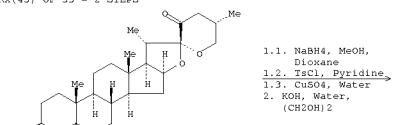


## RX(44) OF 53 - 2 STEPS

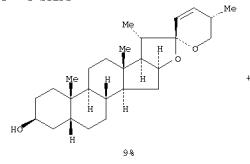


NOTE: 1) stereoselective

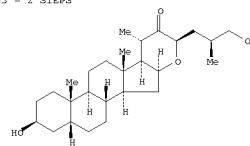
## RX(45) OF 53 - 2 STEPS



## RX(45) OF 53 - 2 STEPS

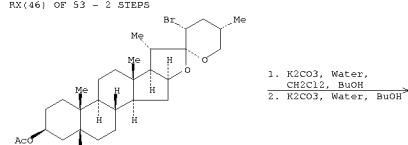


## RX(45) OF 53 - 2 STEPS

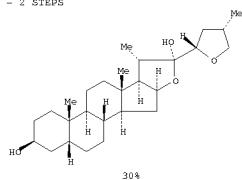


NOTE: 1) stereoselective

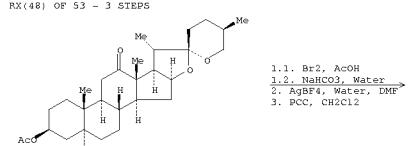
## RX(46) OF 53 - 2 STEPS



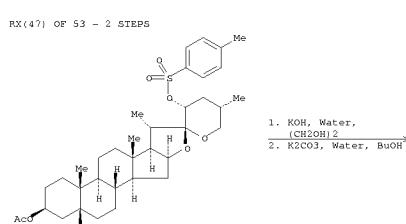
## RX(46) OF 53 - 2 STEPS



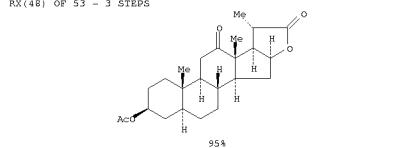
## RX(48) OF 53 - 3 STEPS



## RX(47) OF 53 - 2 STEPS

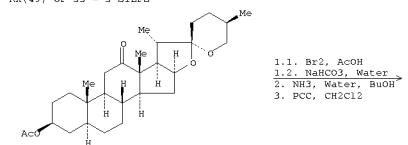


## RX(48) OF 53 - 3 STEPS

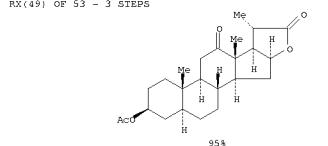


NOTE: 1) stereoselective

## RX(49) OF 53 - 3 STEPS



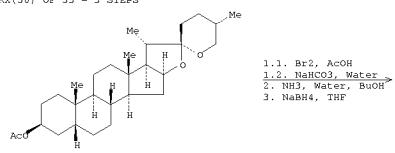
## RX(49) OF 53 - 3 STEPS



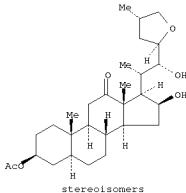
NOTE: 1) stereoselective

16 ANSWER 4 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(50) OF 53 - 3 STEPS

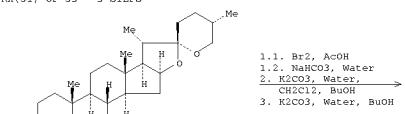


RX(50) OF 53 - 3 STEPS



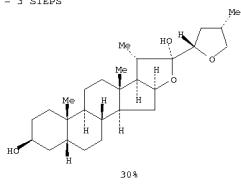
NOTE: 1) stereoselective

RX(51) OF 53 - 3 STEPS



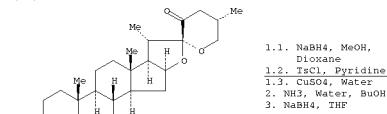
16 ANSWER 4 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(51) OF 53 - 3 STEPS

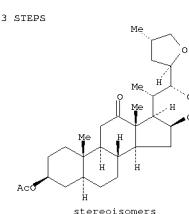


NOTE: 1) stereoselective

RX(52) OF 53 - 3 STEPS



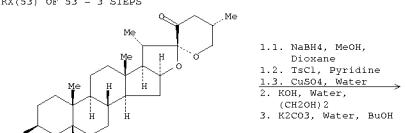
RX(52) OF 53 - 3 STEPS



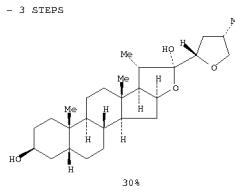
NOTE: 1) stereoselective

16 ANSWER 4 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(53) OF 53 - 3 STEPS



RX(53) OF 53 - 3 STEPS



NOTE: 1) stereoselective

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

16 ANSWER 5 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 137:325559 CASREACT  
TI Optimization of the Wolff-Kishner reaction for the obtainment of tigogenin from hecogenin  
AU M. Lourdes Peyer, Garcia, Jose Alberto Ruiz; Haza, Ulises Jauregui;  
Garcia, Juan Lora; Agero, Juan Agero  
CS Centro de Quimica Farmaceutica, Ciudad de La Habana, Cuba  
SO Revista CENIC, Ciencias Quimicas (2001), 32(3), 51-54  
CODEN: RCCQER; ISSN: 1015-8553

PB Centro Nacional de Investigaciones Cientificas

DT Journal

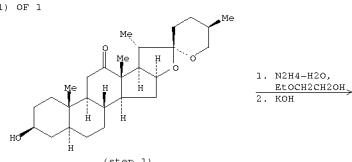
LA Spanish

GI

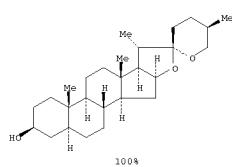
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The basic raw material for steroids synthesis is hecogenin (I; R<sub>1</sub>=O), which is obtained from hecenque juice, a byproduct from a natural source like Agave fourcroydes, available in Cuba. This fact lets us develop a procedure for oxymetholone (II) synthesis. Oxymetholone is an anabolic steroid used in the treatment of aplastic anemia and other blood diseases. The first step of oxymetholone synthesis is the obtainment of tigogenin (III) which is by different methods. In this paper we developed the tigogenin synthesis by the optimization of the Wolff-Kishner reduction reaction with the use of 2-ethoxyethanol in order to guarantee the use of conventional reactors for the process in the industry. For this purpose an exptl. 23 factorial central composed design was used. It was demonstrated that the tigogenin yield is proportional to the quantity of 2-ethoxyethanol (0.4 mL of hydrazine hydrate, 0.1 g of potassium hydride and 6.25 mL of 2-ethoxyethanol for 1 g of hecogenin was employed). On the other hand, although 2-ethoxyethanol is equally toxic as ethylene glycol, it is cheaper and it guarantees an addnl. savings in the cost of raw material.

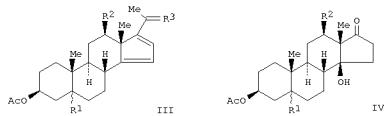
RX(1) OF 1



RX(1) OF 1

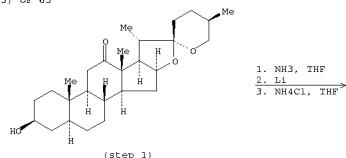
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

16 ANSWER 6 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
AN 137:125313 CASREACT  
TI Oxidative Fragmentation of Pregna-14,16-dien-20-ones to  
14 $\beta$ -Hydroxyandrost-15-en-17-one  
AU Li, Jenny Fer D.; Hershko, Clayton H.  
C5 Center for New Directions in Organic Synthesis, Department of Chemistry,  
University of California, Berkeley, CA, 94720, USA  
SO Journal of Organic Chemistry (2002), 67(14), 4742-4746  
PB CORDEN JOCEM; ISSN: 0022-3263  
DT American Chemical Society  
LA English  
GI

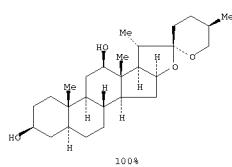


AB Two methods have been developed for efficient conversion of Pregna-14,16-dien-20-ones into 14 $\beta$ -hydroxyandrost-15-en-17-ones. One procedure consists of treatment of the ring-D dienone successively with sodium borohydride and singlet oxygen. The reaction is illustrated by the conversion of prega-14,16-dien-20-one I into 14 $\beta$ -hydroxyandrost-15-en-17-one II, via the corresponding allylic alc. III (R1 =  $\alpha$ -H, R2 = O). R3 =  $\beta$ -OH or  $\beta$ -H. Although this two-step procedure is simple, it provides II in relatively low yield, accompanied by a smaller amount of the isomeric 14 $\alpha$ -hydroxyandrost-15-en-17-one. An alternative one-step conversion is achieved by treatment of I with a peroxyacid in the presence of a strong protic acid. This process is illustrated by the two-step conversion of I into hydroxy ketone IV (R1 =  $\alpha$ -H, R2 = O) and by the analogous conversion of dienone III (R1 =  $\beta$ -H, R2 = H, R3 = O) into hydroxy ketone IV (R1 =  $\beta$ -H, R2 = H) in 61% overall yield.

RX(15) OF 63

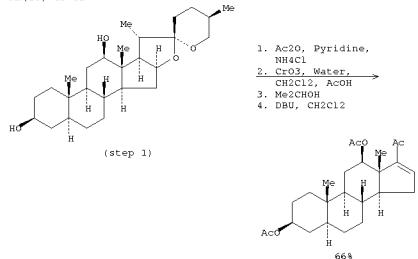


RX(15) OF 63

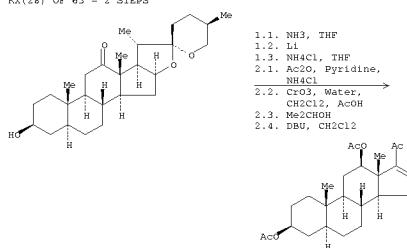


NOTE: stereoselective

RX(16) OF 63

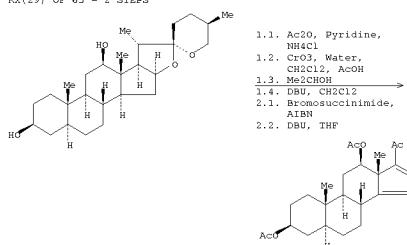


RX(28) OF 63 - 2 STEPS

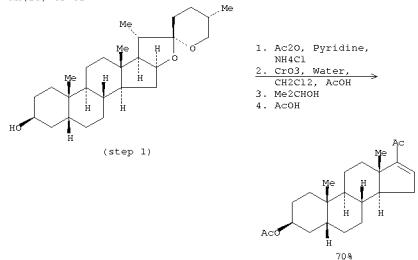


NOTE: 1) stereoselective

RX(29) OF 63 - 2 STEPS

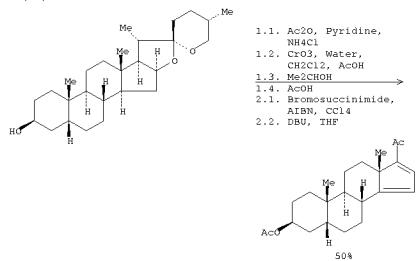


RX(18) OF 63

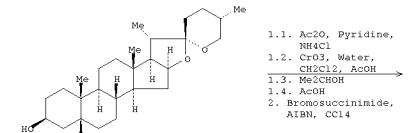


16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(34) OF 63 - 2 STEPS

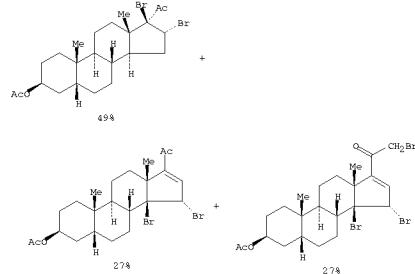


RX(35) OF 63 - 2 STEPS



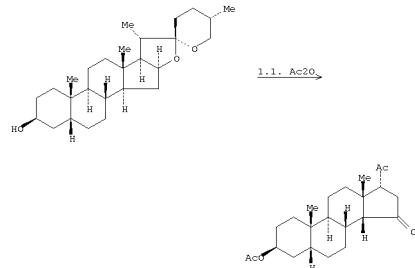
16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(35) OF 63 - 2 STEPS



NOTE: 2) stereoselective, regioselective

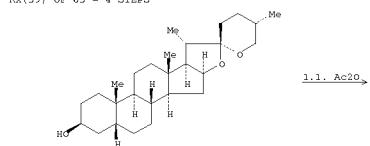
RX(38) OF 63 - 4 STEPS



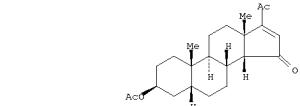
NOTE: 3) stereoselective, regioselective, 34% overall yield, 4) stereoselective

16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(39) OF 63 - 4 STEPS

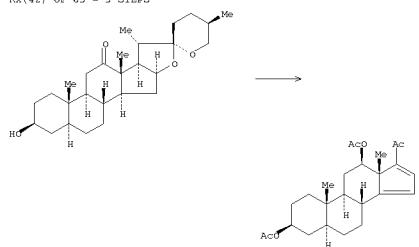


RX(39) OF 63 - 4 STEPS



NOTE: 3) stereoselective

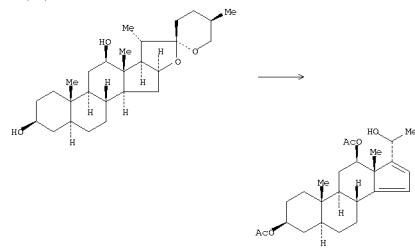
RX(42) OF 63 - 3 STEPS



NOTE: 1) stereoselective

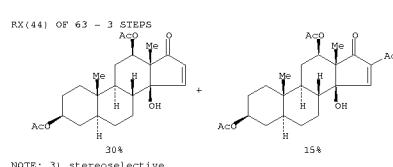
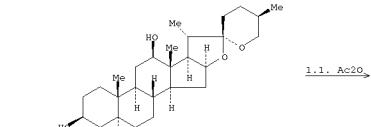
16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(43) OF 63 - 3 STEPS



NOTE: 3) stereoselective

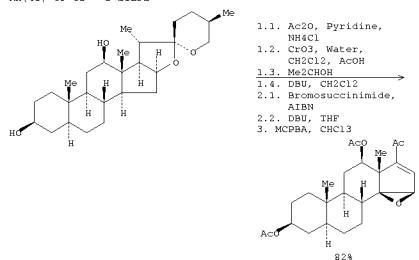
RX(44) OF 63 - 3 STEPS



NOTE: 3) stereoselective

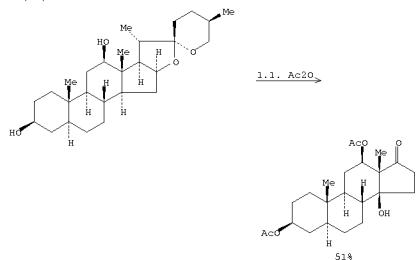
16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(45) OF 63 - 3 STEPS



NOTE: 3) stereoselective

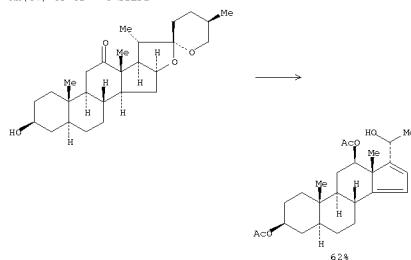
RX(46) OF 63 - 3 STEPS



NOTE: 3) stereoselective, regioselective

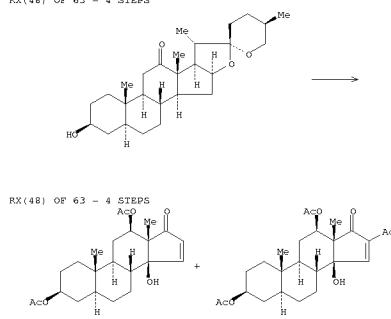
16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(47) OF 63 - 4 STEPS



NOTE: 1) stereoselective, 4) stereoselective

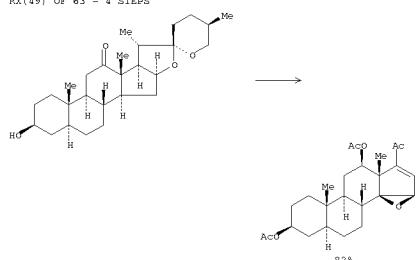
RX(48) OF 63 - 4 STEPS



NOTE: 1) stereoselective, 4) stereoselective

16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

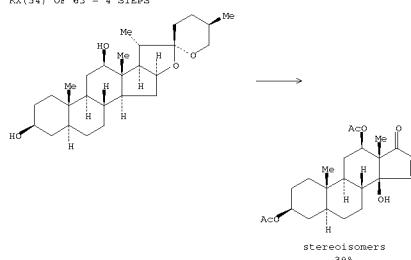
RX(49) OF 63 - 4 STEPS



NOTE: 1) stereoselective, 4) stereoselective

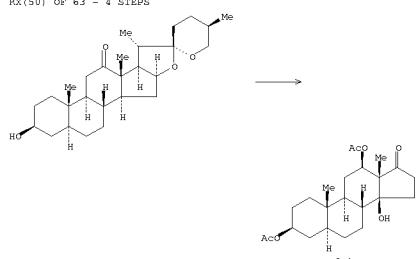
16 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(54) OF 63 - 4 STEPS



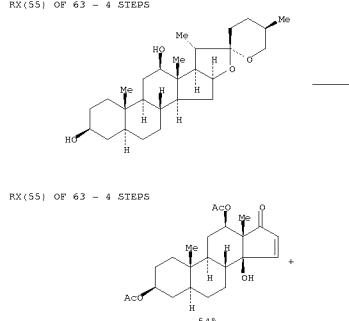
NOTE: 3) stereoselective, 4) stereoselective, regioselective

RX(50) OF 63 - 4 STEPS

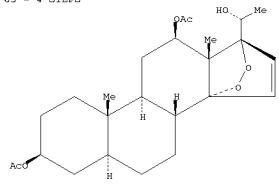


NOTE: 1) stereoselective, 4) stereoselective, regioselective

RX(55) OF 63 - 4 STEPS

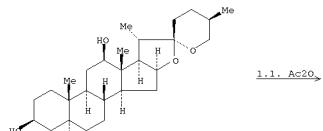


RX(55) OF 63 - 4 STEPS

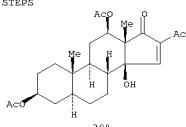


NOTE: 3) stereoselective, 4) stereoselective, regioselective, optimized on reaction conditions

RX(56) OF 63 - 4 STEPS

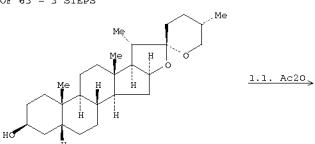


RX(56) OF 63 - 4 STEPS

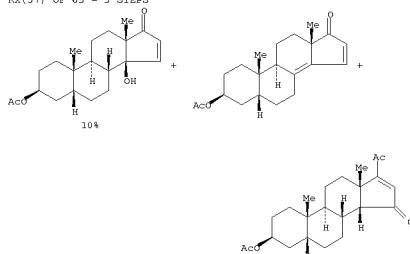


NOTE: 3) stereoselective, 4) regioselective

RX(57) OF 63 - 3 STEPS

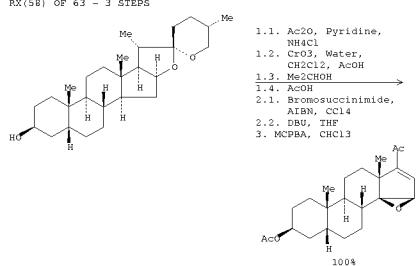


RX(57) OF 63 - 3 STEPS



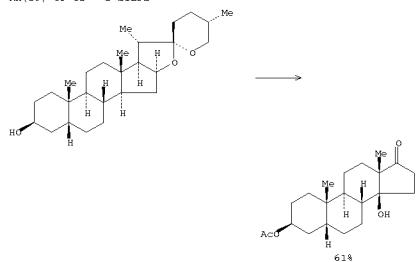
NOTE: 3) stereoselective, regioselective, 34% overall yield

RX(58) OF 63 - 3 STEPS



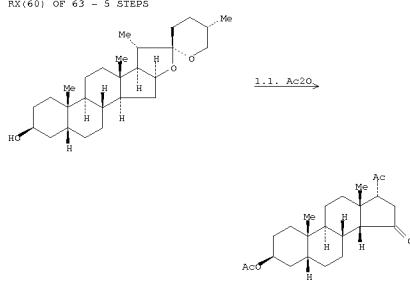
NOTE: 3) stereoselective

RX(59) OF 63 - 3 STEPS



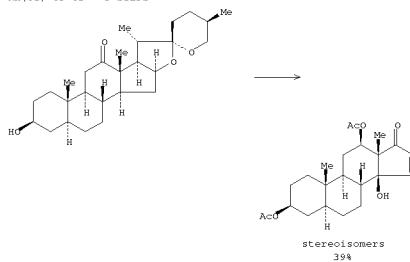
NOTE: 3) stereoselective, regioselective

RX(60) OF 63 - 5 STEPS



NOTE: 3) stereoselective, 5) stereoselective

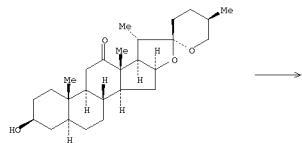
RX(61) OF 63 - 5 STEPS



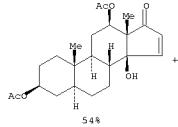
NOTE: 1) stereoselective, 4) stereoselective, 5) stereoselective, regioselective

L6 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

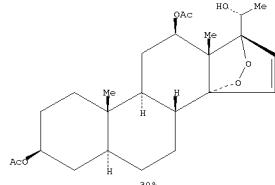
RX(62) OF 63 - 5 STEPS



RX(62) OF 63 - 5 STEPS



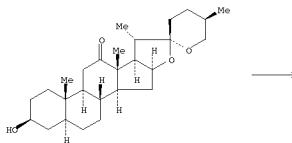
RX(62) OF 63 - 5 STEPS



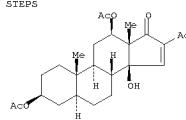
NOTE: 1) stereoselective, 4) stereoselective, 5) stereoselective, regioselective, optimized on reaction conditions

L6 ANSWER 6 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(63) OF 63 - 5 STEPS



RX(63) OF 63 - 5 STEPS

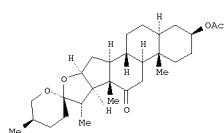


NOTE: 1) stereoselective, 4) stereoselective, 5) regioselective

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

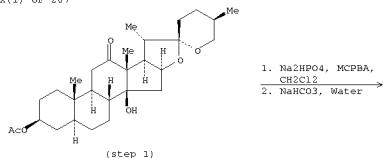
L6 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN

AN 137:20507 CASREACT  
TI Cephalostatin Support Studies. 22. Dyotropic Rearrangement Facilitated Proximal Functionalization and Oxidative Removal of Angular Methyl Groups: Efficient Synthesis of 23'-Deoxy Cephalostatin 1 Analogue  
AU Li, W.; Leduc, Thomas; Fuchs, P. J.  
CS Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA  
SG Journal of the American Chemical Society (2002), 124(17), 4548-4549  
COO JACSAT; ISSN: 0002-7863  
PB American Chemical Society  
DT Journal  
LA English  
GI

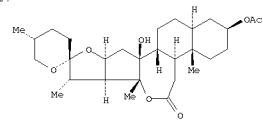


AB Oxidative functionalization (or removal) of a steroidial C18 Me group is possible using a previously unknown dyotropic rearrangement of a seven-membered fused C-ring lactone to a 6-ring spiro lactone. Spiroketal equilibration led to the 23-deoxy South analog of cephalostatin 1 in only 12 steps (23% overall yield) from hecogenin acetate I, and to a strained diene South analog in 16 steps (23% overall). Total synthesis of 23'-deoxy cephalostatin 1 was accomplished in 16 operations (21% overall; average 86% yield per operation) and that of 16',17'-dehydro-23'-deoxy cephalostatin 1 in 15 operations from I (8% overall; average 84% op).

RX(1) OF 207



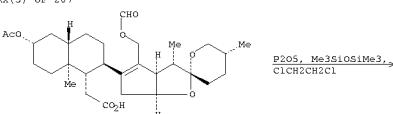
RX(1) OF 207



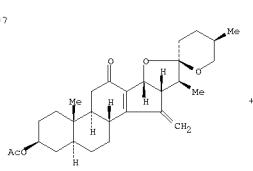
NOTE: Baeyer-Villiger oxidn.

L6 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

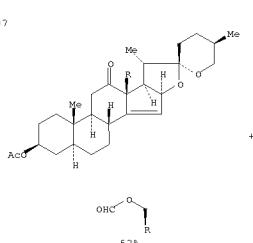
RX(5) OF 207



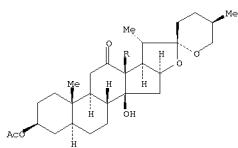
RX(5) OF 207



RX(5) OF 207

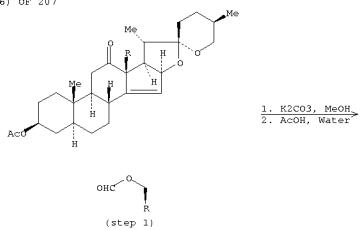


RX(5) OF 207

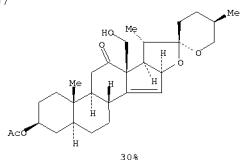


NOTE: Friedel-Crafts reaction, stereoselective

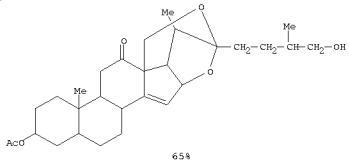
RX(6) OF 207



RX(6) OF 207

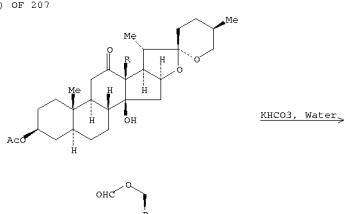


RX(6) OF 207

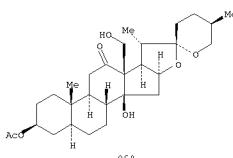


NOTE: stereoselective

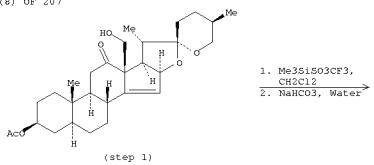
RX(7) OF 207



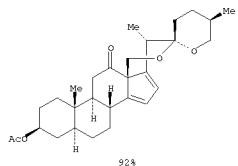
RX(7) OF 207



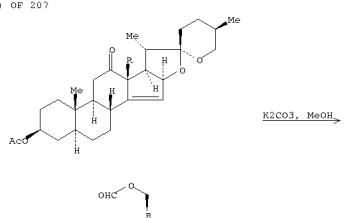
RX(8) OF 207



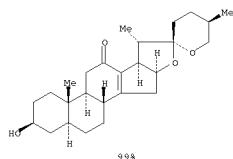
RX(8) OF 207



RX(9) OF 207



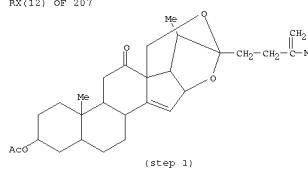
RX(9) OF 207



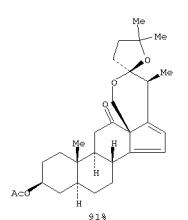
RX(10) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(11) OF 207 - REACTION DIAGRAM NOT AVAILABLE

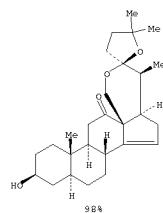
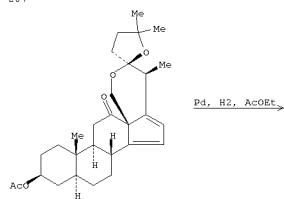
RX(12) OF 207



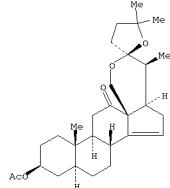
RX(12) OF 207



RX(13) OF 207

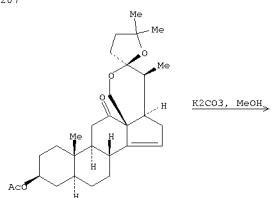


RX(13) OF 207

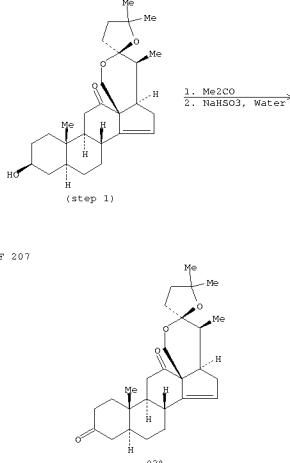


NOTE: regioselective, stereoselective

RX(14) OF 207

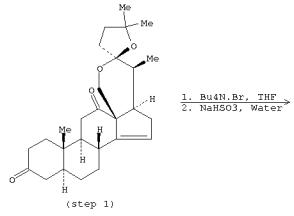


RX(15) OF 207

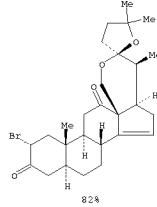


NOTE: Jones reagent used stage 1  
97%

RX(16) OF 207

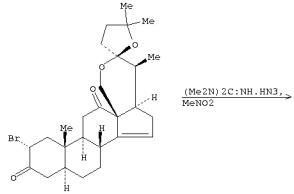


RX(16) OF 207

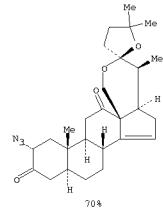


NOTE: stereoselective

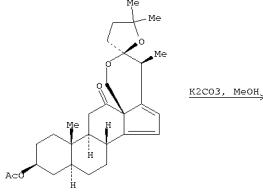
RX(17) OF 207



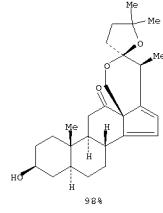
RX(17) OF 207



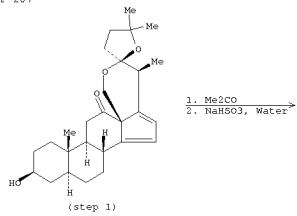
RX(18) OF 207



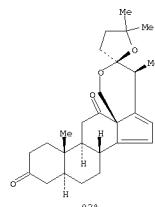
RX(18) OF 207



RX(19) OF 207

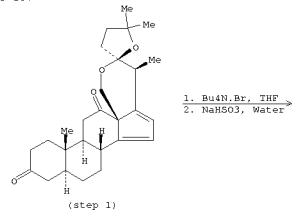


RX(19) OF 207

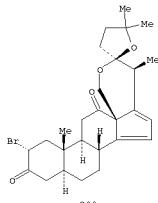


NOTE: Jones reagent used stage 1

RX(20) OF 207

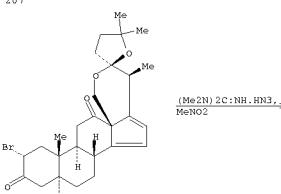


RX(20) OF 207



NOTE: stereoselective

RX(21) OF 207



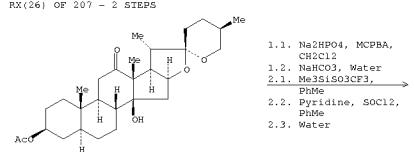
RX(22) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(23) OF 207 - REACTION DIAGRAM NOT AVAILABLE

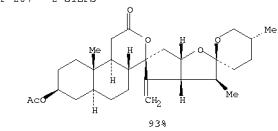
RX(24) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(25) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(26) OF 207 - 2 STEPS

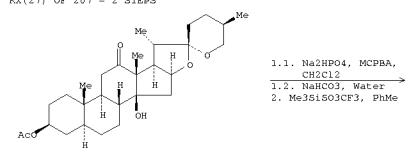


RX(26) OF 207 - 2 STEPS

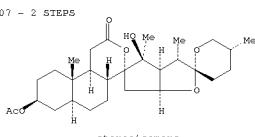


NOTE: 1) Baeyer-Villiger oxidn.

RX(27) OF 207 - 2 STEPS

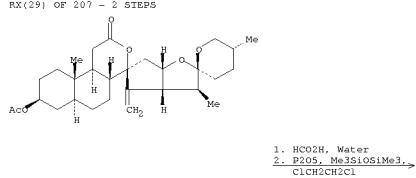


RX(27) OF 207 - 2 STEPS

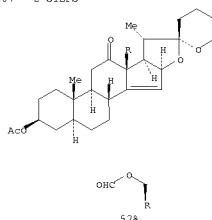


NOTE: 1) Baeyer-Villiger oxidn., 2) stereoselective dyotropic rearrangement

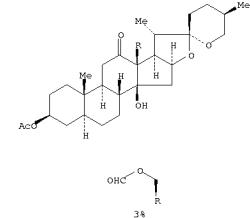
RX(29) OF 207 - 2 STEPS



RX(29) OF 207 - 2 STEPS

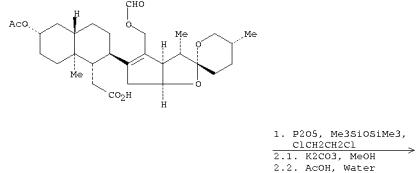


RX(29) OF 207 - 2 STEPS

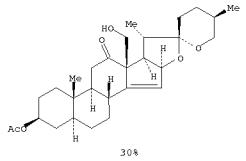


NOTE: 2) Freidel-Crafts reaction, stereoselective

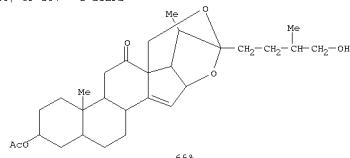
RX(30) OF 207 - 2 STEPS



RX(30) OF 207 - 2 STEPS

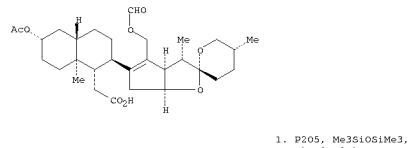


RX(30) OF 207 - 2 STEPS



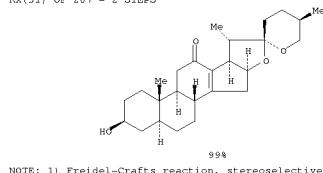
NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective

RX(31) OF 207 - 2 STEPS



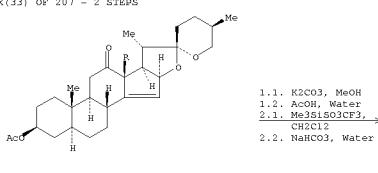
1.  $\text{P2O5, Me3SiOSiMe3, ClCH}_2\text{CH}_2\text{Cl} \longrightarrow$   
2.  $\text{K2CO}_3, \text{MeOH}$

RX(31) OF 207 - 2 STEPS



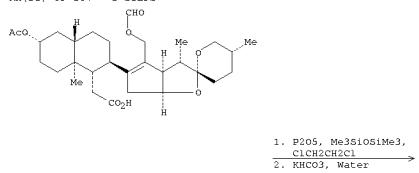
NOTE: 1) Freidel-Crafts reaction, stereoselective

RX(33) OF 207 - 2 STEPS



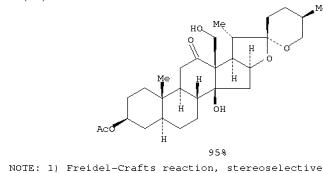
1.  $\text{K2CO}_3, \text{MeOH}$   
2.  $\text{AcOH, Water}$   
2.1.  $\text{Me3SiOBu}_3\text{CF}_3, \text{CH}_2\text{Cl}_2$   
2.2.  $\text{NaHCO}_3, \text{Water}$

RX(32) OF 207 - 2 STEPS



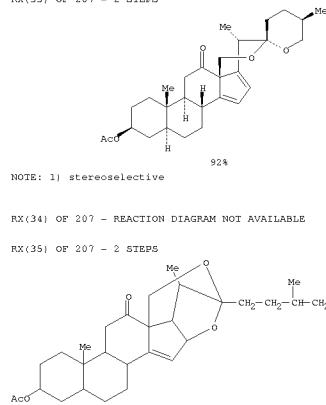
1.  $\text{P2O5, Me3SiOSiMe3, ClCH}_2\text{CH}_2\text{Cl} \longrightarrow$   
2.  $\text{KHCO}_3, \text{Water}$

RX(33) OF 207 - 2 STEPS



NOTE: 1) Freidel-Crafts reaction, stereoselective

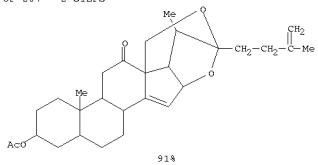
RX(33) OF 207 - 2 STEPS



1.  $\text{TsCl, Pyridine, CH}_2\text{Cl}_2 \longrightarrow$   
2.1.  $\text{NaI, DMF}$   
2.2.  $\text{DBU}$

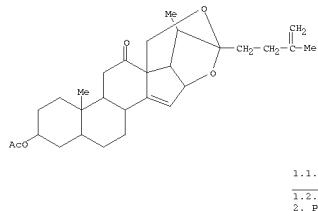
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(35) OF 207 - 2 STEPS

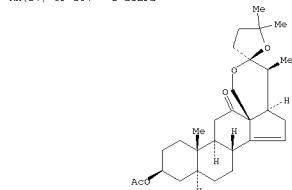


RX(36) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(37) OF 207 - 2 STEPS



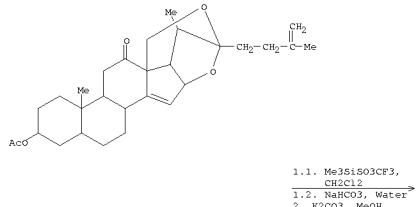
RX(37) OF 207 - 2 STEPS



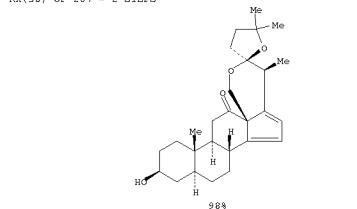
NOTE: 2) regioselective, stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(38) OF 207 - 2 STEPS

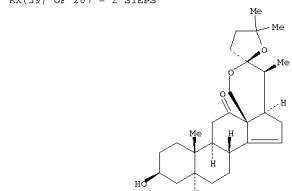


RX(38) OF 207 - 2 STEPS



16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

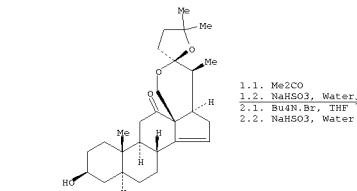
RX(39) OF 207 - 2 STEPS



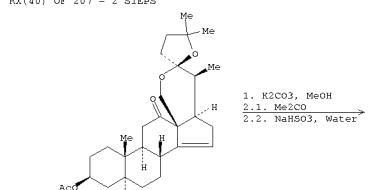
NOTE: 1) regioselective, stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

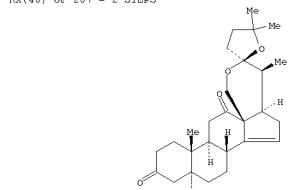
RX(41) OF 207 - 2 STEPS



RX(40) OF 207 - 2 STEPS

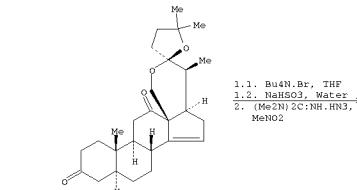


RX(40) OF 207 - 2 STEPS

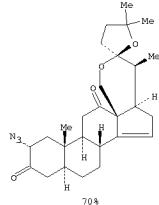


NOTE: 2) Jones reagent used stage 1

RX(41) OF 207 - 2 STEPS



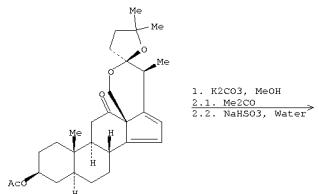
RX(42) OF 207 - 2 STEPS



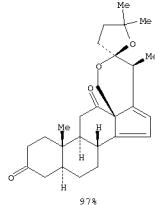
NOTE: 1) stereoselective

RX(43) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(44) OF 207 - 2 STEPS

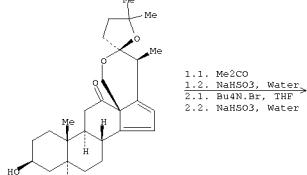


RX(44) OF 207 - 2 STEPS

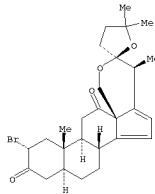


NOTE: 2) Jones reagent used stage 1

RX(45) OF 207 - 2 STEPS

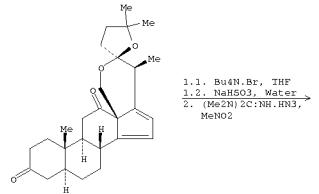


RX(45) OF 207 - 2 STEPS

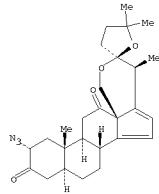


NOTE: 1) Jones reagent used stage 1, 2) stereoselective

RX(46) OF 207 - 2 STEPS



RX(46) OF 207 - 2 STEPS



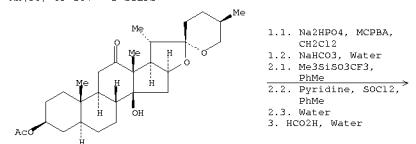
NOTE: 1) stereoselective

RX(47) OF 207 - REACTION DIAGRAM NOT AVAILABLE

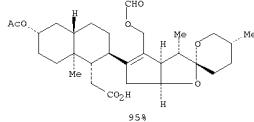
RX(48) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(49) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(50) OF 207 - 3 STEPS

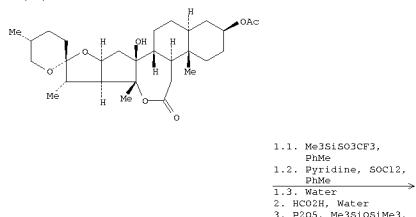


RX(50) OF 207 - 3 STEPS

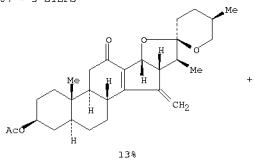


NOTE: 1) Baeyer-Villiger oxidn.

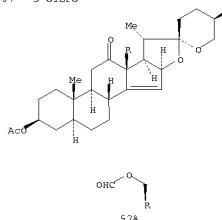
RX(51) OF 207 - 3 STEPS



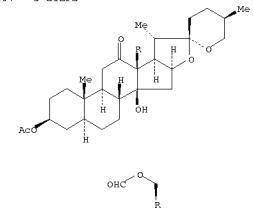
RX(51) OF 207 - 3 STEPS



RX(51) OF 207 - 3 STEPS

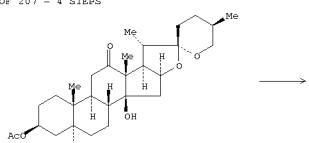


RX(51) OF 207 - 3 STEPS

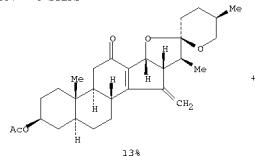


NOTE: 3) Freidel-Crafts reaction, stereoselective

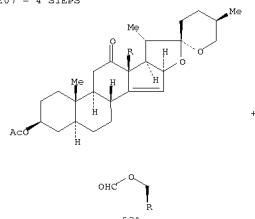
RX(52) OF 207 - 4 STEPS



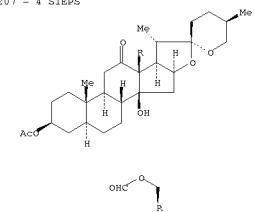
RX(52) OF 207 - 4 STEPS



RX(52) OF 207 - 4 STEPS

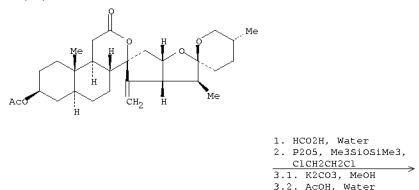


RX(52) OF 207 - 4 STEPS

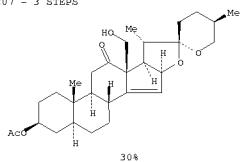


NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction, stereoselective

RX(53) OF 207 - 3 STEPS

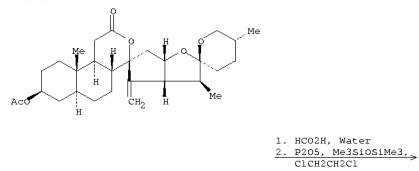


RX(53) OF 207 - 3 STEPS

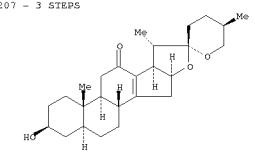


NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective

RX(54) OF 207 - 3 STEPS

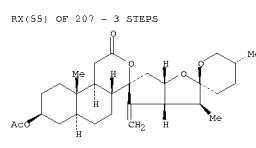


RX(54) OF 207 - 3 STEPS



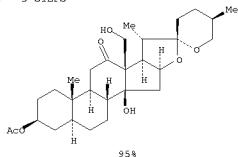
NOTE: 2) Freidel-Crafts reaction, stereoselective

RX(55) OF 207 - 3 STEPS



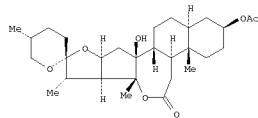
NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective

RX(55) OF 207 - 3 STEPS



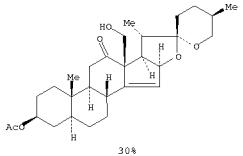
NOTE: 2) Freidel-Crafts reaction, stereoselective

RX(56) OF 207 - 4 STEPS

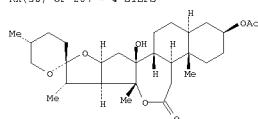


1.1. Me<sub>3</sub>SiSO<sub>3</sub>CF<sub>3</sub>, PhMe  
1.2. Pyridine, SOCl<sub>2</sub>, PhMe  
1.3. Water  
2. HCO<sub>2</sub>H, Water  
3. P2O5, Me<sub>3</sub>SiOSiMe<sub>3</sub>, ClCH<sub>2</sub>CH<sub>2</sub>Cl  
4.1. K<sub>2</sub>CO<sub>3</sub>, MeOH  
4.2. AcOH, Water

RX(56) OF 207 - 4 STEPS

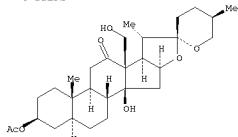


RX(56) OF 207 - 4 STEPS



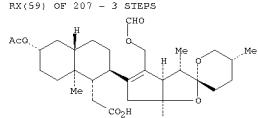
1.1. Me<sub>3</sub>SiSO<sub>3</sub>CF<sub>3</sub>, PhMe  
1.2. Pyridine, SOCl<sub>2</sub>, PhMe  
1.3. Water  
2. HCO<sub>2</sub>H, Water  
3. P2O5, Me<sub>3</sub>SiOSiMe<sub>3</sub>, ClCH<sub>2</sub>CH<sub>2</sub>Cl  
4. K<sub>2</sub>CO<sub>3</sub>, Water

RX(58) OF 207 - 4 STEPS



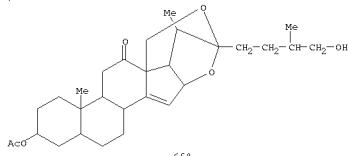
NOTE: 3) Freidel-Crafts reaction, stereoselective

RX(59) OF 207 - 3 STEPS



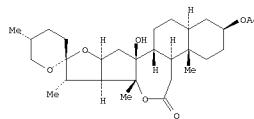
1. P2O5, Me<sub>3</sub>SiOSiMe<sub>3</sub>, ClCH<sub>2</sub>CH<sub>2</sub>Cl  
2.1. K<sub>2</sub>CO<sub>3</sub>, MeOH  
2.2. AcOH, Water  
3.1. Me<sub>3</sub>SiSO<sub>3</sub>CF<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>  
3.2. NaHCO<sub>3</sub>, Water

RX(56) OF 207 - 4 STEPS



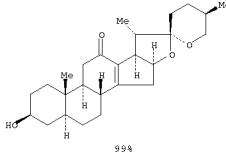
NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective

RX(57) OF 207 - 4 STEPS



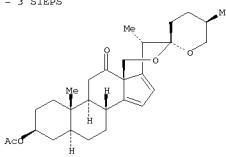
1.1. Me<sub>3</sub>SiSO<sub>3</sub>CF<sub>3</sub>, PhMe  
1.2. Pyridine, SOCl<sub>2</sub>, PhMe  
1.3. Water  
2. HCO<sub>2</sub>H, Water  
3. P2O5, Me<sub>3</sub>SiOSiMe<sub>3</sub>, ClCH<sub>2</sub>CH<sub>2</sub>Cl  
4. K<sub>2</sub>CO<sub>3</sub>, MeOH

RX(57) OF 207 - 4 STEPS



NOTE: 3) Freidel-Crafts reaction, stereoselective

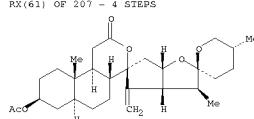
RX(59) OF 207 - 3 STEPS



NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective

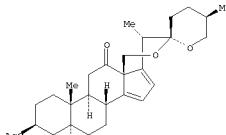
RX(60) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(61) OF 207 - 4 STEPS



1. HCO<sub>2</sub>H, Water  
2. P2O5, Me<sub>3</sub>SiOSiMe<sub>3</sub>, ClCH<sub>2</sub>CH<sub>2</sub>Cl  
3.1. K<sub>2</sub>CO<sub>3</sub>, MeOH  
3.2. AcOH, Water  
4.1. Me<sub>3</sub>SiSO<sub>3</sub>CF<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>  
4.2. NaHCO<sub>3</sub>, Water

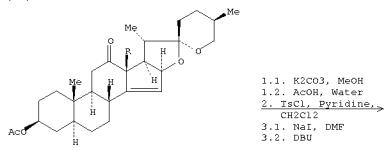
RX(61) OF 207 - 4 STEPS



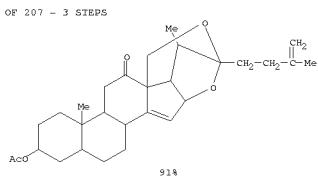
NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective

RX(62) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(63) OF 207 - 3 STEPS

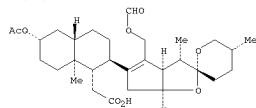


RX(63) OF 207 - 3 STEPS



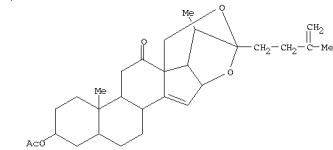
NOTE: 1) stereoselective

RX(64) OF 207 - 4 STEPS



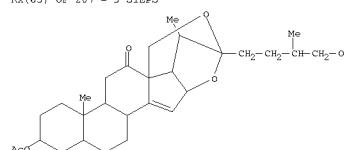
1. P2O5, Me3SiOSiMe3, CICH<sub>2</sub>CH<sub>2</sub>Cl  
2. 1. K2CO3, MeOH  
2. 2. AcOH, Water  
3. TsCl, Pyridine, CH<sub>2</sub>Cl<sub>2</sub>  
4. 1. NaI, DMF  
4. 2. DBU

RX(64) OF 207 - 4 STEPS



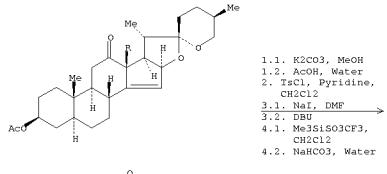
NOTE: 1) Friedel-Crafts reaction, stereoselective, 2) stereoselective

RX(65) OF 207 - 3 STEPS



1. TsCl, Pyridine, CH<sub>2</sub>Cl<sub>2</sub>  
2. 1. NaI, DMF  
2. 2. DBU  
3. 1. Me3SiOSiCF<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>  
3. 2. NaHCO<sub>3</sub>, Water

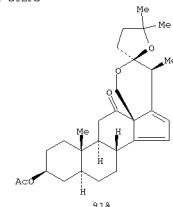
RX(66) OF 207 - 4 STEPS



1. K<sub>2</sub>CO<sub>3</sub>, MeOH  
1.2. AcOH, Water  
2. TsCl, Pyridine, CH<sub>2</sub>Cl<sub>2</sub>  
3. 1. NaI, DMF  
3. 2. DBU  
4. 1. Me3SiOSiCF<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>  
4. 2. NaHCO<sub>3</sub>, Water



RX(66) OF 207 - 4 STEPS

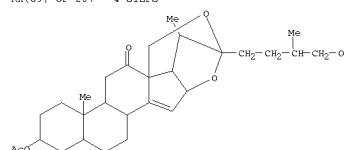


NOTE: 1) stereoselective

RX(67) OF 207 - REACTION DIAGRAM NOT AVAILABLE

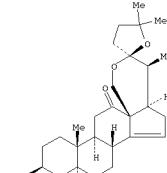
RX(68) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(69) OF 207 - 4 STEPS



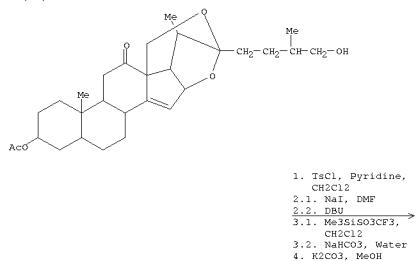
1. TsCl, Pyridine, CH<sub>2</sub>Cl<sub>2</sub>  
2. 1. NaI, DMF  
2. 2. DBU  
3. 1. Me3SiOSiCF<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>  
3. 2. NaHCO<sub>3</sub>, Water  
4. Pd, H<sub>2</sub>, AcOEt

RX(69) OF 207 - 4 STEPS

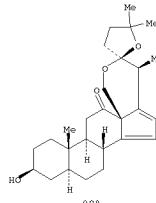


NOTE: 4) regioselective, stereoselective

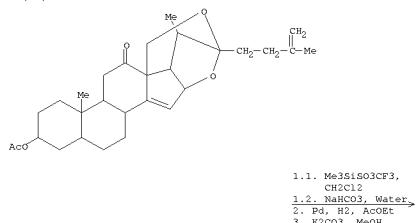
RX(70) OF 207 - 4 STEPS



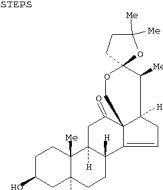
RX(70) OF 207 - 4 STEPS



RX(71) OF 207 - 3 STEPS

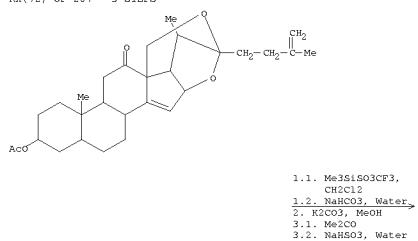


RX(71) OF 207 - 3 STEPS

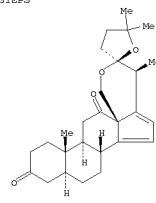


NOTE: 2) regioselective, stereoselective

RX(72) OF 207 - 3 STEPS



RX(72) OF 207 - 3 STEPS

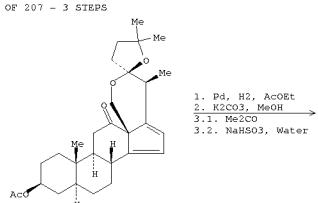


NOTE: 3) Jones reagent used stage 1

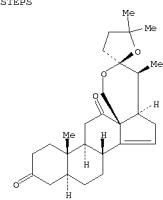
RX(73) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(74) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(75) OF 207 - 3 STEPS

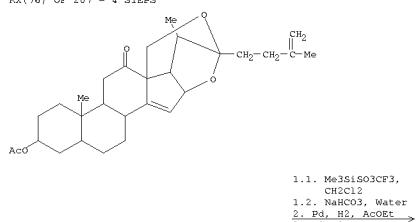


RX(75) OF 207 - 3 STEPS



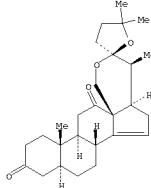
NOTE: 1) regioselective, stereoselective, 3) Jones reagent used stage 1

RX(76) OF 207 - 4 STEPS



16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

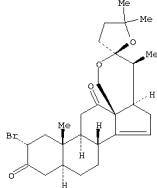
RX(76) OF 207 - 4 STEPS



NOTE: 2) regioselective, stereoselective, 4) Jones reagent used stage 1

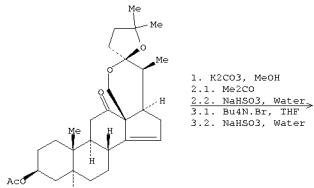
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(77) OF 207 - 3 STEPS

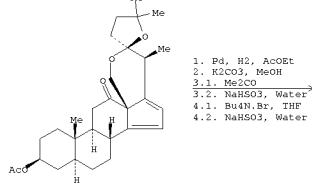


NOTE: 2) Jones reagent used stage 1, 3) stereoselective

RX(77) OF 207 - 3 STEPS

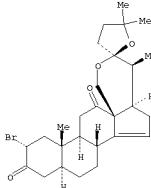


RX(78) OF 207 - 4 STEPS



16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

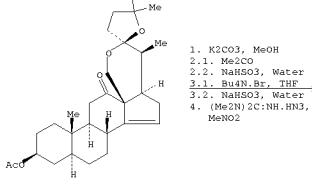
RX(78) OF 207 - 4 STEPS



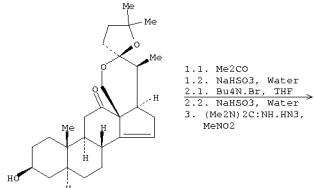
NOTE: 1) regioselective, stereoselective, 3) Jones reagent used stage 1, 4) stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

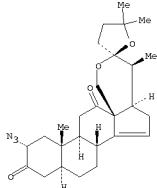
RX(80) OF 207 - 4 STEPS



RX(79) OF 207 - 3 STEPS

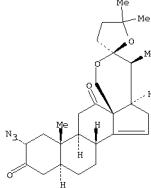


RX(80) OF 207 - 4 STEPS



NOTE: 2) Jones reagent used stage 1, 3) stereoselective

RX(79) OF 207 - 3 STEPS



NOTE: 1) Jones reagent used stage 1, 2) stereoselective

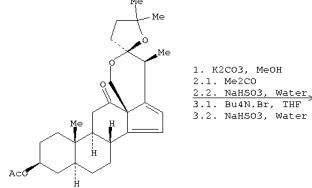
RX(81) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(82) OF 207 - REACTION DIAGRAM NOT AVAILABLE

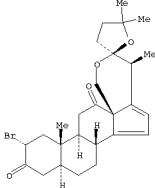
RX(83) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(84) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(85) OF 207 - 3 STEPS

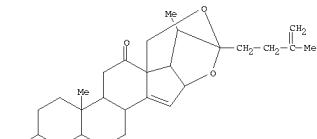


RX(85) OF 207 - 3 STEPS



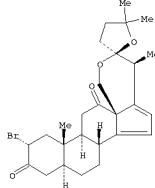
NOTE: 2) Jones reagent used stage 1, 3) stereoselective

RX(86) OF 207 - 4 STEPS



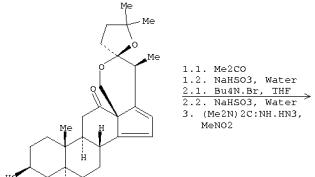
1.1. Me3SiSO3CF3,  
CH2Cl2  
1.2. NaHCO3, Water  
2. H2O2, MeOH  
3. 1. NaBH4  
3. 2. NaHSO3, Water  
4.1. Bu4N.Br, THF  
4.2. NaHSO3, Water

RX(86) OF 207 - 4 STEPS

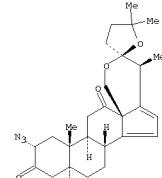


NOTE: 3) Jones reagent used stage 1, 4) stereoselective

RX(87) OF 207 - 3 STEPS

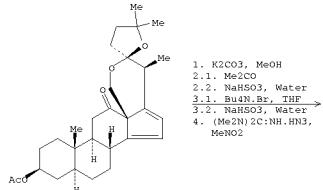


RX(87) OF 207 - 3 STEPS

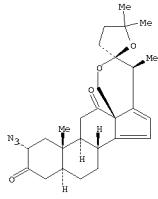


NOTE: 1) Jones reagent used stage 1, 2) stereoselective

RX(88) OF 207 - 4 STEPS



RX(88) OF 207 - 4 STEPS



NOTE: 2) Jones reagent used stage 1, 3) stereoselective

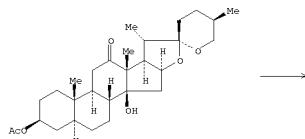
RX(89) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(90) OF 207 - REACTION DIAGRAM NOT AVAILABLE

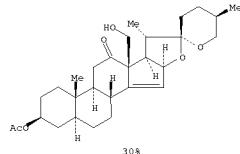
RX(91) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(92) OF 207 - REACTION DIAGRAM NOT AVAILABLE

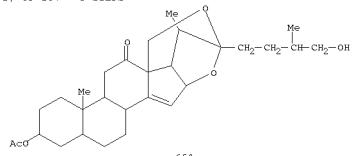
RX(93) OF 207 - 5 STEPS



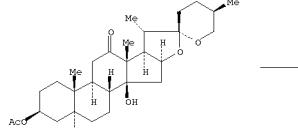
RX(93) OF 207 - 5 STEPS



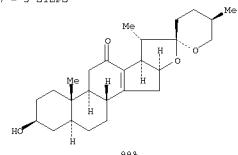
RX(93) OF 207 - 5 STEPS

NOTE: 1) Baeyer-Villiger oxidn., 4) Friedel-Crafts reaction,  
stereoselective, 5) stereoselective

RX(94) OF 207 - 5 STEPS

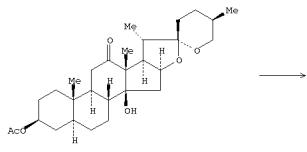


RX(94) OF 207 - 5 STEPS



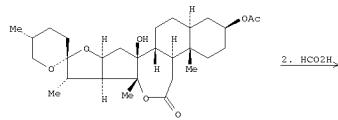
NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction, stereoselective

RX(95) OF 207 - 5 STEPS

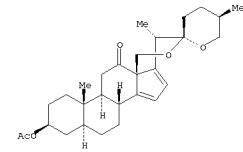


NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction, stereoselective

RX(96) OF 207 - 5 STEPS



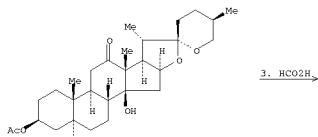
RX(96) OF 207 - 5 STEPS



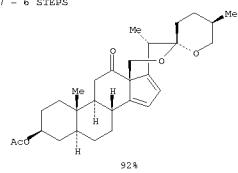
NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective

RX(97) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(98) OF 207 - 6 STEPS



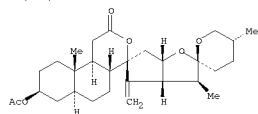
RX(98) OF 207 - 6 STEPS



NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction, stereoselective, 5) stereoselective

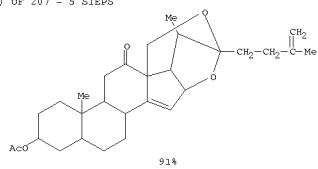
RX(99) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(100) OF 207 - 5 STEPS



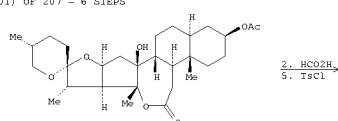
1. HCO<sub>2</sub>H, Water  
2. P105, Me<sub>3</sub>SiOSiMe<sub>3</sub>, ClCH<sub>2</sub>CH<sub>2</sub>Cl  
3.1. K<sub>2</sub>CO<sub>3</sub>, MeOH  
3.2. AcOH, Water  
4. TFA, Pyridine, CH<sub>2</sub>Cl<sub>2</sub>  
5.1. NaI, DMF  
5.2. DBU

RX(100) OF 207 - 5 STEPS

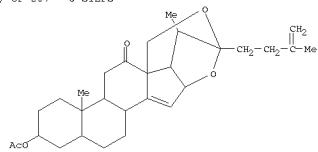


NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective

RX(101) OF 207 - 6 STEPS

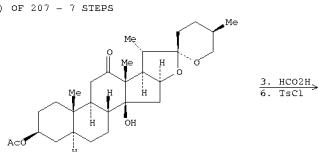


RX(101) OF 207 - 6 STEPS

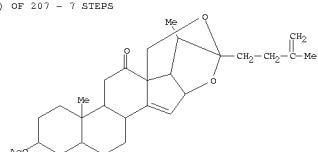


NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective

RX(102) OF 207 - 7 STEPS

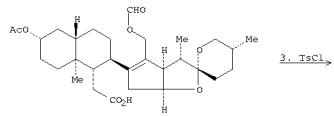


RX(102) OF 207 - 7 STEPS

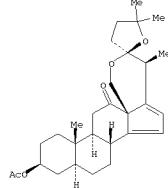


NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction, stereoselective, 5) stereoselective

RX(103) OF 207 - 5 STEPS

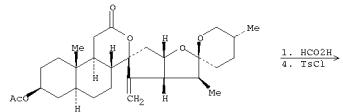


RX(103) OF 207 - 5 STEPS

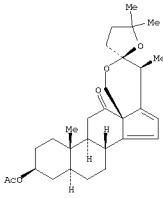


NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective

RX(104) OF 207 - 6 STEPS

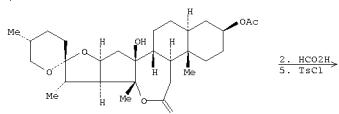


RX(104) OF 207 - 6 STEPS

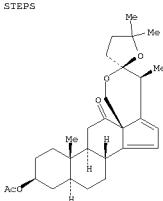


NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective

RX(105) OF 207 - 7 STEPS

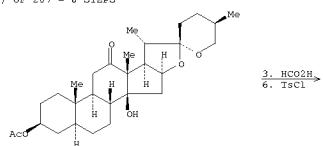


RX(105) OF 207 - 7 STEPS

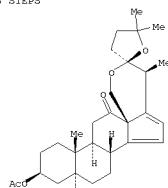


NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective

RX(106) OF 207 - 8 STEPS

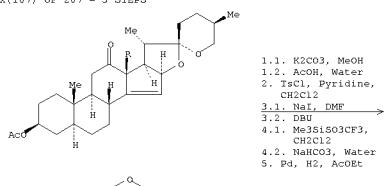


RX(106) OF 207 - 8 STEPS

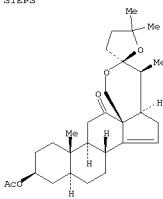


NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction, stereoselective, 5) stereoselective

RX(107) OF 207 - 5 STEPS

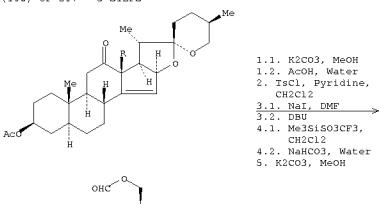


RX(107) OF 207 - 5 STEPS

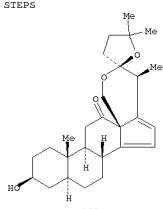


NOTE: 1) stereoselective, 5) regioselective, stereoselective

RX(108) OF 207 - 5 STEPS



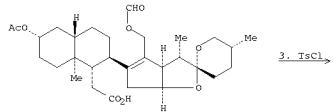
RX(108) OF 207 - 5 STEPS



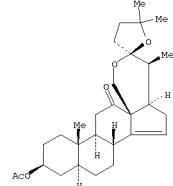
NOTE: 1) stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(109) OF 207 - 6 STEPS

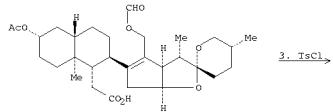


RX(109) OF 207 - 6 STEPS



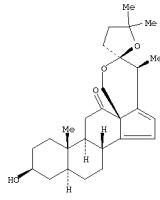
NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective, 6) regioselective, stereoselective

RX(110) OF 207 - 6 STEPS



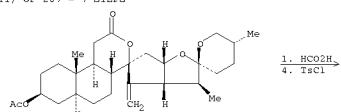
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(110) OF 207 - 6 STEPS

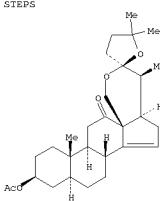


NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective

RX(111) OF 207 - 7 STEPS



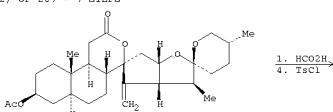
RX(111) OF 207 - 7 STEPS



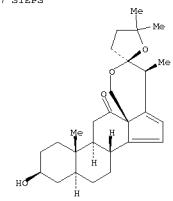
NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective, 7) regioselective, stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(112) OF 207 - 7 STEPS



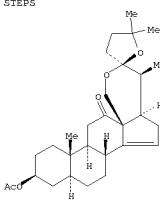
RX(112) OF 207 - 7 STEPS



NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective

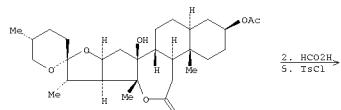
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(113) OF 207 - 8 STEPS

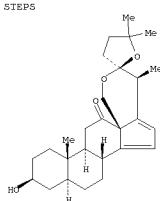


NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective, 8) regioselective, stereoselective

RX(114) OF 207 - 8 STEPS

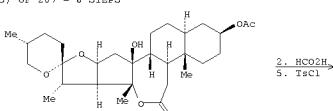


RX(114) OF 207 - 8 STEPS



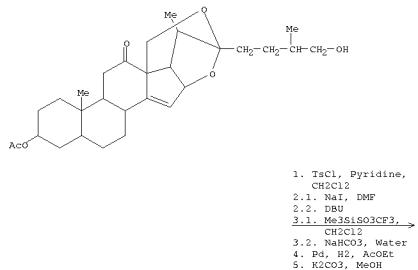
NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective

RX(113) OF 207 - 8 STEPS

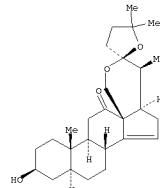


16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(115) OF 207 - 5 STEPS



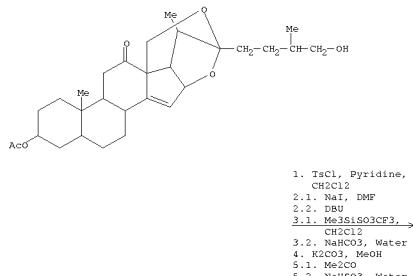
RX(115) OF 207 - 5 STEPS



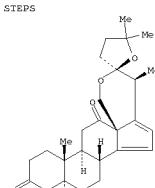
NOTE: 4) regioselective, stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(116) OF 207 - 5 STEPS



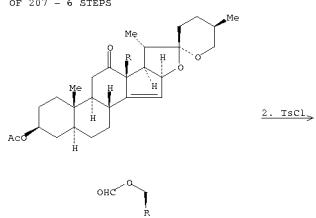
RX(116) OF 207 - 5 STEPS



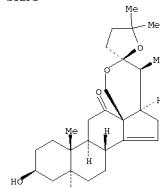
NOTE: 5) Jones reagent used stage 1

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(117) OF 207 - 6 STEPS



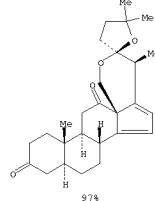
RX(117) OF 207 - 6 STEPS



NOTE: 1) stereoselective, 5) regioselective, stereoselective

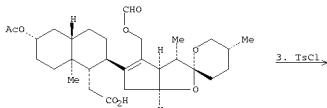
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(118) OF 207 - 6 STEPS

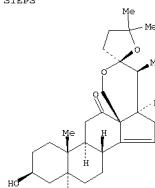


NOTE: 1) stereoselective, 6) Jones reagent used stage 1

RX(119) OF 207 - 7 STEPS

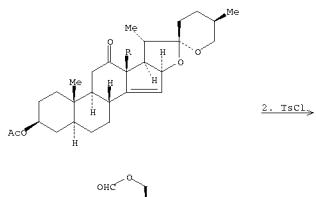


RX(119) OF 207 - 7 STEPS



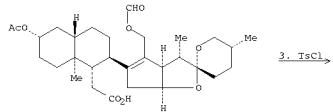
NOTE: 1) Friedel-Crafts reaction, stereoselective, 2) stereoselective, 6) regioselective, stereoselective

RX(118) OF 207 - 6 STEPS

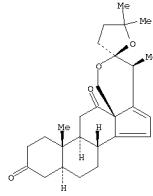


16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(120) OF 207 - 7 STEPS

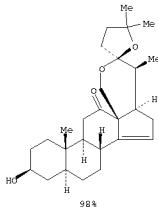


RX(120) OF 207 - 7 STEPS

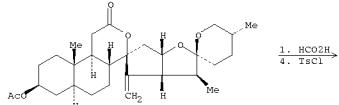
NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective,  
7) regioselective, stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

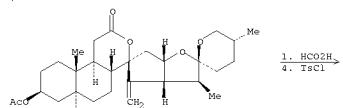
RX(121) OF 207 - 8 STEPS

NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective,  
7) regioselective, stereoselective

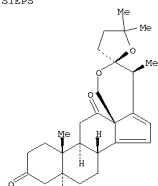
RX(122) OF 207 - 8 STEPS



RX(121) OF 207 - 8 STEPS



RX(122) OF 207 - 8 STEPS

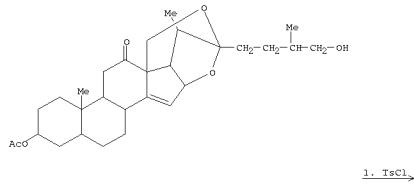
NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective,  
8) Jones reagent used stage 1

RX(123) OF 207 - REACTION DIAGRAM NOT AVAILABLE

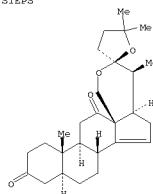
RX(124) OF 207 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(125) OF 207 - 6 STEPS

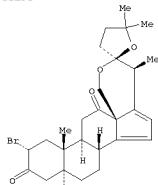


RX(125) OF 207 - 6 STEPS

NOTE: 4) regioselective, stereoselective, 6) Jones reagent used stage  
1

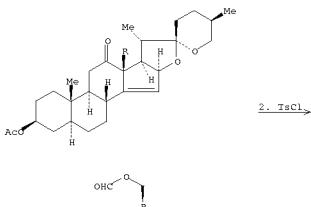
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(126) OF 207 - 6 STEPS

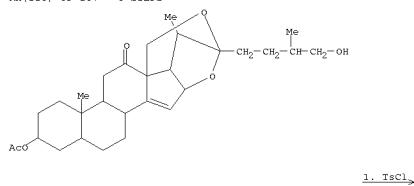


NOTE: 5) Jones reagent used stage 1, 6) stereoselective

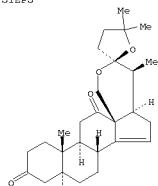
RX(127) OF 207 - 7 STEPS



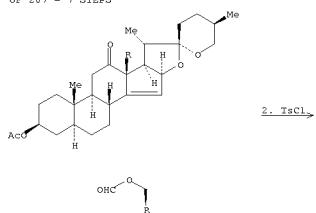
RX(126) OF 207 - 6 STEPS



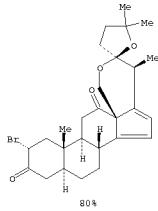
RX(127) OF 207 - 7 STEPS

NOTE: 1) stereoselective, 5) regioselective, stereoselective, 7) Jones  
reagent used stage 1

RX(128) OF 207 - 7 STEPS

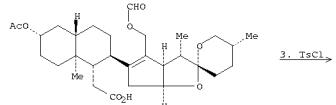


RX(128) OF 207 - 7 STEPS



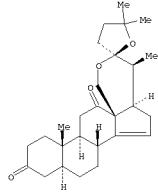
NOTE: 1) stereoselective, 6) Jones reagent used stage 1, 7) stereoselective

RX(129) OF 207 - 8 STEPS



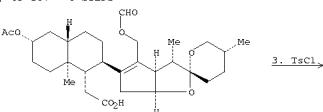
NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective, 6) regioselective, 7) Jones reagent used stage 1, 8) stereoselective

RX(129) OF 207 - 8 STEPS

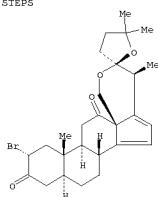


NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective, 6) regioselective, 7) Jones reagent used stage 1, 8) stereoselective

RX(130) OF 207 - 8 STEPS

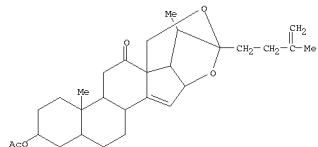


RX(130) OF 207 - 8 STEPS



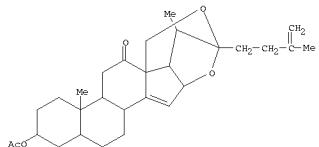
NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective, 6) Jones reagent used stage 1, 7) Jones reagent used stage 1, 8) stereoselective

RX(131) OF 207 - 5 STEPS



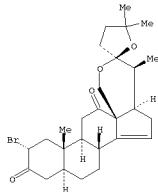
1.1.  $\text{Me}_3\text{SiOSO}_3\text{CF}_3$ ,  
 $\text{CH}_2\text{Cl}_2$   
1.2.  $\text{NaHCO}_3$ , Water  
2.  $\text{Pd}, \text{H}_2, \text{AcoEt}$   
3.  $\text{LiAlD}_4$ ,  $\text{MeOH} \xrightarrow{\longrightarrow}$   
4.1.  $\text{Me}_3\text{CO}$   
4.2.  $\text{NaHSO}_3$ , Water  
5.1.  $\text{Bu}_4\text{NBr}$ , THF  
5.2.  $\text{NaHSO}_3$ , Water

RX(132) OF 207 - 5 STEPS



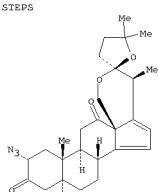
1.1.  $\text{Me}_3\text{SiOSO}_3\text{CF}_3$ ,  
 $\text{CH}_2\text{Cl}_2$   
1.2.  $\text{NaHCO}_3$ , Water  
2.  $\text{K}_2\text{CO}_3$ ,  $\text{MeOH}$   
3.  $\text{LiAlD}_4$ ,  $\text{MeOH} \xrightarrow{\longrightarrow}$   
3.2.  $\text{NaHSO}_3$ , Water  
4.1.  $\text{Bu}_4\text{NBr}$ , THF  
4.2.  $\text{NaHSO}_3$ , Water  
5.  $(\text{MeO}_2\text{N})_2\text{C}(\text{=NH})\text{HN}_3$ ,  
 $\text{MeNO}_2$

RX(131) OF 207 - 5 STEPS



NOTE: 2) regioselective, stereoselective, 4) Jones reagent used stage 1, 5) stereoselective

RX(132) OF 207 - 5 STEPS



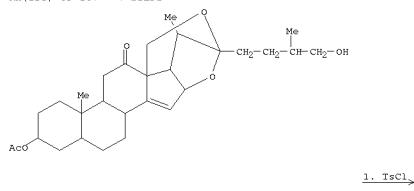
NOTE: 3) Jones reagent used stage 1, 4) stereoselective

RX(133) OF 207 - REACTION DIAGRAM NOT AVAILABLE

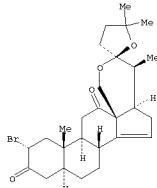
RX(134) OF 207 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(135) OF 207 - 7 STEPS

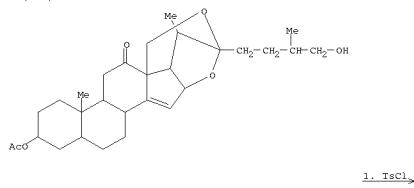


RX(135) OF 207 - 7 STEPS



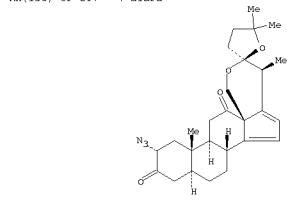
NOTE: 4) regioselective, stereoselective, 6) Jones reagent used stage 1, 7) stereoselective  
1, 7) stereoselective

RX(136) OF 207 - 7 STEPS



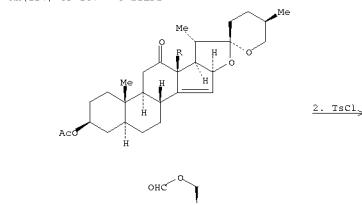
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(136) OF 207 - 7 STEPS



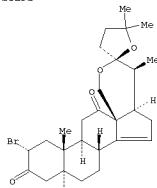
NOTE: 5) Jones reagent used stage 1, 6) stereoselective

RX(137) OF 207 - 8 STEPS



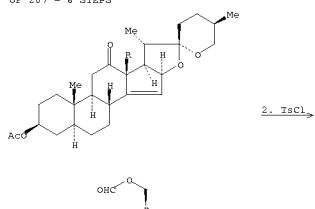
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(137) OF 207 - 8 STEPS

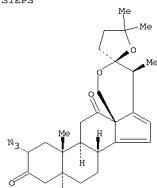


NOTE: 1) stereoselective, 5) regioselective, stereoselective, 7) Jones reagent used stage 1, 8) stereoselective

RX(138) OF 207 - 8 STEPS



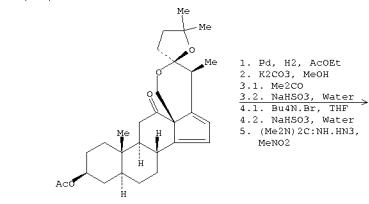
RX(138) OF 207 - 8 STEPS



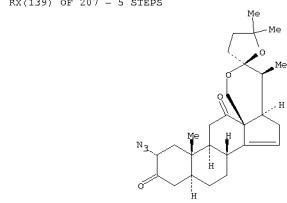
NOTE: 1) stereoselective, 6) Jones reagent used stage 1, 7) stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(139) OF 207 - 5 STEPS

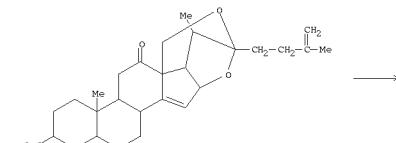


RX(139) OF 207 - 5 STEPS



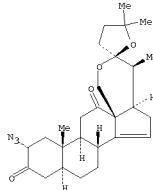
NOTE: 1) regioselective, stereoselective, 3) Jones reagent used stage 1, 4) stereoselective

RX(140) OF 207 - 6 STEPS



16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

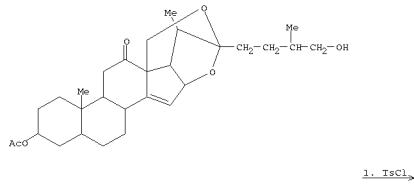
RX(140) OF 207 - 6 STEPS



NOTE: 2) regioselective, stereoselective, 4) Jones reagent used stage 1, 5) stereoselective

RX(141) OF 207 - REACTION DIAGRAM NOT AVAILABLE

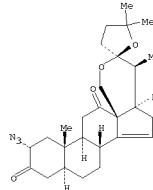
RX(142) OF 207 - 8 STEPS



NOTE: 4) regioselective, stereoselective, 6) Jones reagent used stage 1, 7) stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(142) OF 207 - 8 STEPS



NOTE: 4) regioselective, stereoselective, 6) Jones reagent used stage 1, 7) stereoselective

RX(143) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(144) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(145) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(146) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(147) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(148) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(149) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(150) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(151) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(152) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(153) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(154) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(155) OF 207 - REACTION DIAGRAM NOT AVAILABLE

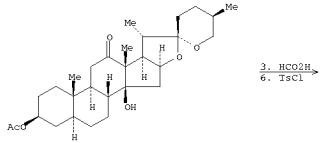
RX(156) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(157) OF 207 - REACTION DIAGRAM NOT AVAILABLE

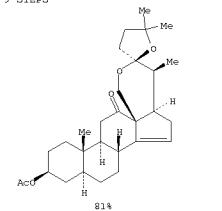
RX(158) OF 207 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(159) OF 207 - 9 STEPS

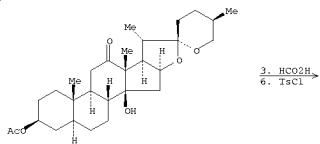


RX(159) OF 207 - 9 STEPS



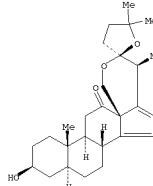
NOTE: 1) Baeyer-Villiger oxidn., 4) Friedel-Crafts reaction, stereoselective, 5) stereoselective, 9) regioselective, stereoselective

RX(160) OF 207 - 9 STEPS



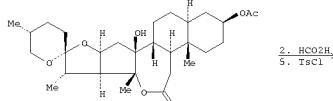
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(160) OF 207 - 9 STEPS

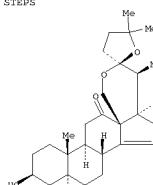


NOTE: 1) Baeyer-Villiger oxidn., 4) Friedel-Crafts reaction, stereoselective, 5) stereoselective

RX(161) OF 207 - 9 STEPS



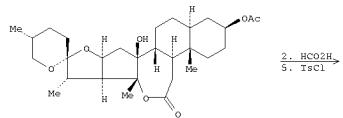
RX(161) OF 207 - 9 STEPS



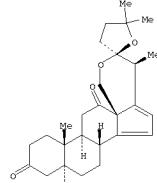
NOTE: 3) Friedel-Crafts reaction, stereoselective, 4) stereoselective, 8) regioselective, stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(162) OF 207 - 9 STEPS

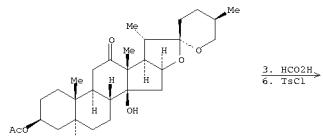


RX(162) OF 207 - 9 STEPS



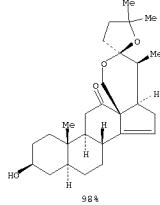
NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective,  
9) Jones reagent used stage 1

RX(163) OF 207 - 10 STEPS



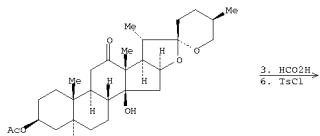
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(163) OF 207 - 10 STEPS

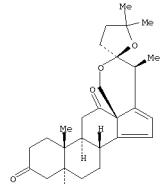


NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction,  
stereoselective, 5) stereoselective, 9) regioselective,  
stereoselective

RX(164) OF 207 - 10 STEPS



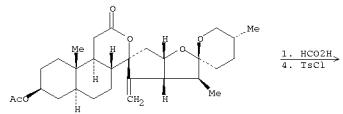
RX(164) OF 207 - 10 STEPS



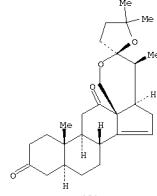
NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction,  
stereoselective, 5) stereoselective, 10) Jones reagent used  
stage 1

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(165) OF 207 - 9 STEPS



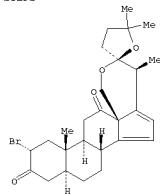
RX(165) OF 207 - 9 STEPS



NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective,  
7) regioselective, stereoselective, 9) Jones reagent used stage  
1

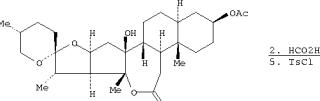
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(166) OF 207 - 9 STEPS

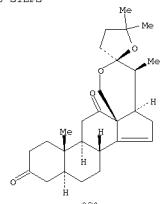


NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective,  
8) Jones reagent used stage 4, 9) stereoselective

RX(167) OF 207 - 10 STEPS

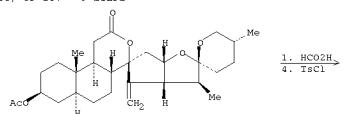


RX(167) OF 207 - 10 STEPS

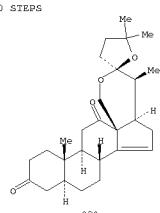


NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective,  
8) regioselective, stereoselective, 10) Jones reagent used stage  
1

RX(166) OF 207 - 9 STEPS



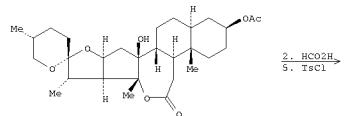
RX(167) OF 207 - 10 STEPS



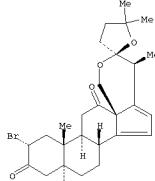
NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective,  
8) regioselective, stereoselective, 10) Jones reagent used stage  
1

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

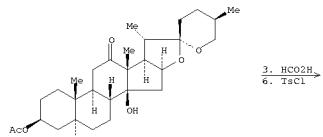
RX(168) OF 207 - 10 STEPS



RX(168) OF 207 - 10 STEPS

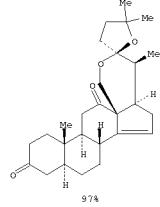
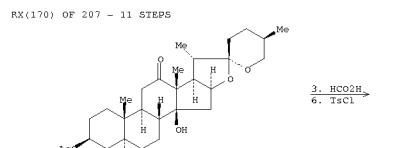
NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective,  
9) Jones reagent used stage 1, 10) stereoselective

RX(169) OF 207 - 11 STEPS

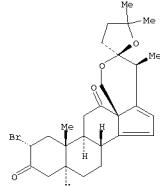


16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(169) OF 207 - 11 STEPS

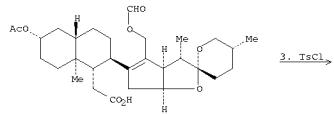
NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction,  
stereoselective, 5) stereoselective, 9) regioselective,  
stereoselective, 11) Jones reagent used stage 1

RX(170) OF 207 - 11 STEPS

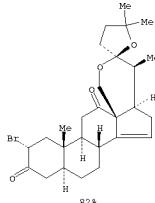
NOTE: 1) Baeyer-Villiger oxidn., 4) Freidel-Crafts reaction,  
stereoselective, 5) stereoselective, 10) Jones reagent used  
stage 1, 11) stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(171) OF 207 - 9 STEPS

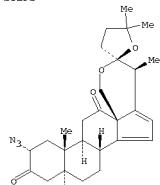


RX(171) OF 207 - 9 STEPS

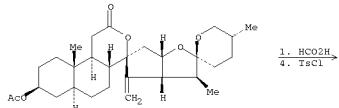
NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective,  
6) regioselective, stereoselective, 8) Jones reagent used stage  
1, 9) stereoselective

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

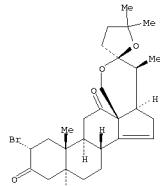
RX(172) OF 207 - 9 STEPS

NOTE: 1) Freidel-Crafts reaction, stereoselective, 2) stereoselective,  
7) Jones reagent used stage 1, 8) stereoselective

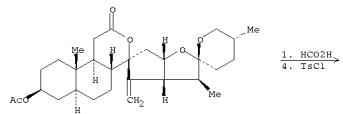
RX(173) OF 207 - 10 STEPS



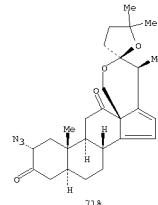
RX(173) OF 207 - 10 STEPS

NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective,  
7) regioselective, stereoselective, 9) Jones reagent used stage  
1, 10) stereoselective

RX(174) OF 207 - 10 STEPS

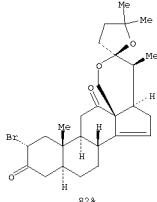


RX(174) OF 207 - 10 STEPS



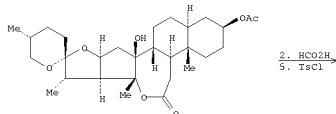
NOTE: 2) Freidel-Crafts reaction, stereoselective, 3) stereoselective,  
8) Jones reagent used stage 1, 9) stereoselective

RX(175) OF 207 - 11 STEPS

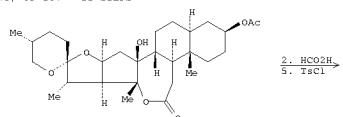


NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective,  
8) regioselective, stereoselective, 10) Jones reagent used stage  
1, 11) stereoselective

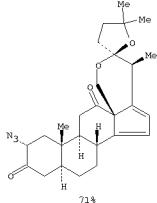
RX(176) OF 207 - 11 STEPS



RX(175) OF 207 - 11 STEPS

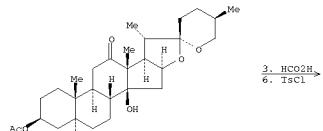


RX(176) OF 207 - 11 STEPS

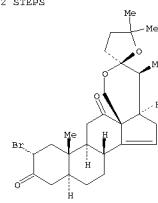


NOTE: 3) Freidel-Crafts reaction, stereoselective, 4) stereoselective,  
9) Jones reagent used stage 1, 10) stereoselective

RX(177) OF 207 - 12 STEPS

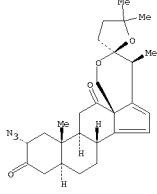


RX(177) OF 207 - 12 STEPS



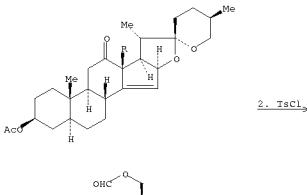
NOTE: 1) Baeyer-Villiger oxind., 4) Freidel-Crafts reaction,  
stereoselective, 5) stereoselective, 9) regioselective,  
stereoselective, 11) Jones reagent used stage 1, 12)  
stereoselective

RX(178) OF 207 - 12 STEPS

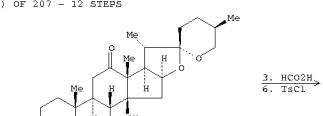


NOTE: 1) Baeyer-Villiger oxind., 4) Freidel-Crafts reaction,  
stereoselective, 5) stereoselective, 10) Jones reagent used  
stage 1, 11) stereoselective

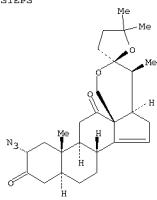
RX(179) OF 207 - 9 STEPS



RX(178) OF 207 - 12 STEPS



RX(179) OF 207 - 9 STEPS

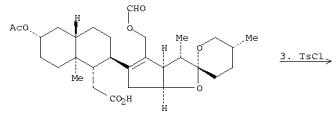


NOTE: 1) stereoselective, 5) regioselective, stereoselective, 7) Jones  
reagent used stage 1, 8) stereoselective

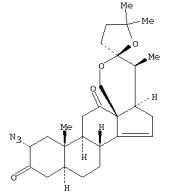
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(180) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(181) OF 207 - 10 STEPS



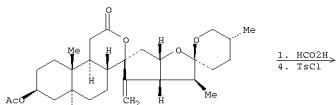
RX(181) OF 207 - 10 STEPS



NOTE: 1) Friedel-Crafts reaction, stereoselective, 2) stereoselective, 6) regioselective, stereoselective, 8) Jones reagent used stage 1, 9) stereoselective

RX(182) OF 207 - REACTION DIAGRAM NOT AVAILABLE

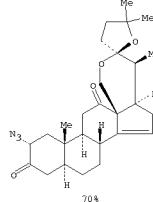
RX(183) OF 207 - 11 STEPS



RX(183) OF 207 - 11 STEPS

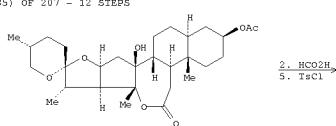
16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(183) OF 207 - 11 STEPS

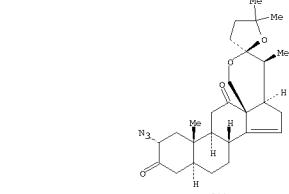


RX(184) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(185) OF 207 - 12 STEPS



RX(185) OF 207 - 12 STEPS

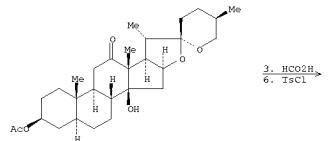


NOTE: 3) Friedel-Crafts reaction, stereoselective, 4) stereoselective, 8) regioselective, stereoselective, 10) Jones reagent used stage 1, 11) stereoselective

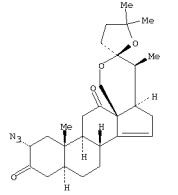
RX(186) OF 207 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(187) OF 207 - 13 STEPS



RX(187) OF 207 - 13 STEPS



NOTE: 1) Baeyer-Villiger oxdn., 4) Friedel-Crafts reaction, stereoselective, 5) stereoselective, 9) regioselective, stereoselective, 11) Jones reagent used stage 1, 12) stereoselective

RX(188) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(189) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(190) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(191) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(192) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(193) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(194) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(195) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(196) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(197) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(198) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(199) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(200) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(201) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(202) OF 207 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 7 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(203) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(204) OF 207 - REACTION DIAGRAM NOT AVAILABLE

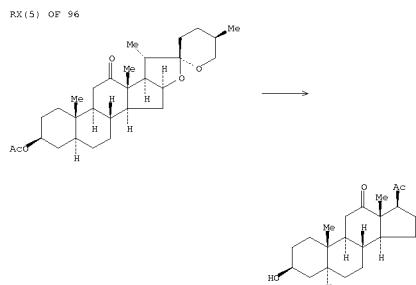
RX(205) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RX(206) OF 207 - REACTION DIAGRAM NOT AVAILABLE

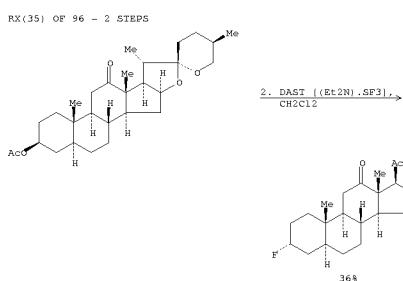
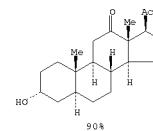
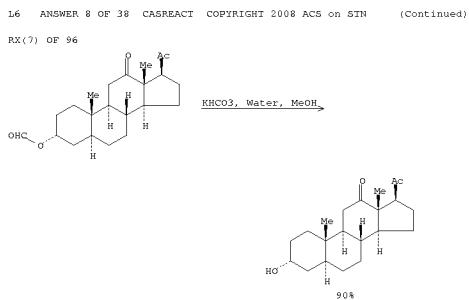
RX(207) OF 207 - REACTION DIAGRAM NOT AVAILABLE

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 137:6304 CASREACT  
 TI 3 $\alpha$ -fluoro analogues of allopregnanolone and their binding to GABA<sub>A</sub> receptors  
 AU Sládečková, Barbora; Kasal, Alexander; Chodounská, Hana; Kristofíkova, Zdena  
 CS Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, 166 10/6, Czech Rep.  
 SO Collection of Czechoslovak Chemical Communications (2002), 47, 103-106  
 CODEN: OCCLCA; ISSN: 0010-0765  
 PB Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic  
 DT Journal  
 LA English  
 AB (Diethylamino)sulfur trifluoride (DAST) was used for the preparation of 3 $\alpha$ -fluorides (e.g., 3 $\alpha$ -fluoro-5 $\alpha$ -pregnane-12,20-dione, 3 $\alpha$ -fluoro-16 $\alpha$ -[(methoxycarbonyl)methyl]-5 $\alpha$ -pregnan-20-one, Me 3 $\alpha$ -fluoro-5 $\alpha$ -androstane-17 $\beta$ -carboxylate, 16 $\alpha$ -methyl-17 $\beta$ -hydroxy-5 $\alpha$ -androstane-10 $\beta$ -ol, and for the preparation of 3 $\alpha$ -difluorides from 3-ketones (e.g., 3,3-difluoro-5 $\alpha$ -pregnan-20-one). Boron trifluoride etherate was used for the conversion of an epoxide into 3 $\alpha$ -fluoro-2 $\beta$ -hydroxy-5 $\alpha$ -pregnan-20-one. The in vitro binding of the 3 $\alpha$ -fluorides and the corresponding 3 $\alpha$ -alcohols to the GABA<sub>A</sub> receptor was established using [<sup>3</sup>H]muscimol and [<sup>3</sup>H]-tert-butylbicyclo[2.2.2]phosphorothionate as ligands.

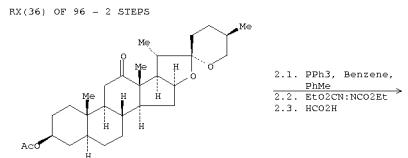


NOTE: literature prepns.



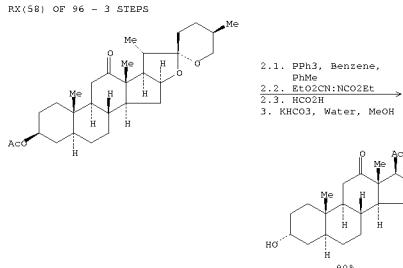
NOTE: 1) literature prepns.

L6 ANSWER 8 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)



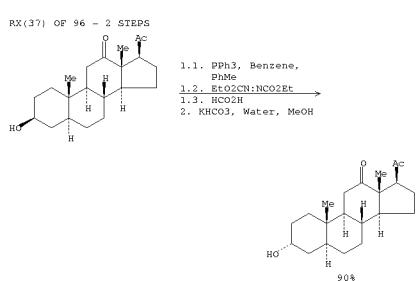
NOTE: 1) literature prepns.

L6 ANSWER 8 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

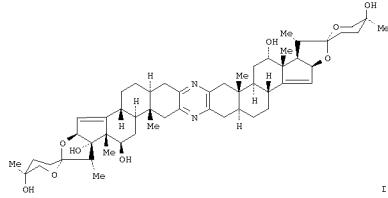


NOTE: 1) literature prepns.

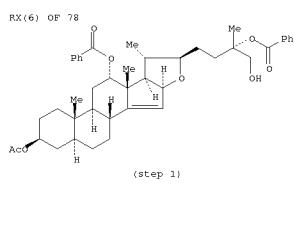
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT



L6 ANSWER 9 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 136:247740 CASREACT  
 II The First Total Synthesis of (Corrected) Ritterazine M  
 AU Seeger, Philip L.  
 CS Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA  
 SG Organic Letters (2002), 4(3), 317-318  
 CODEN ORLETF; ISSN: 1523-7060  
 PB American Chemical Society  
 DI Journal  
 LA English  
 GL

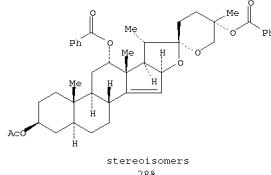


AB Hecogenin acetate was converted to ritterazine M (I) in 16 operations with an average yield per operation of 87%. The overall linear yield was 12%. This confirmed I as the corrected structure for ritterazine M by total synthesis.



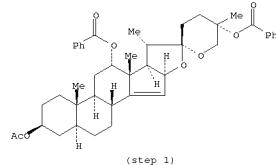
L6 ANSWER 9 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(6) OF 78



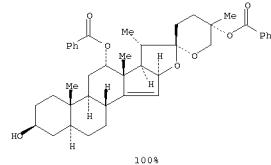
NOTE: Suarez oxidn.

RX(7) OF 78



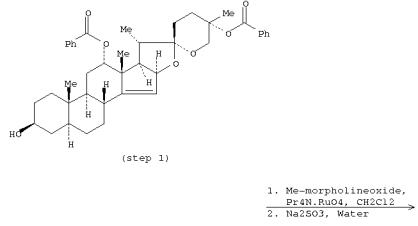
1. K<sub>2</sub>CO<sub>3</sub>, MeOH, Water  
 2. NH<sub>4</sub>Cl, Water

RX(7) OF 78



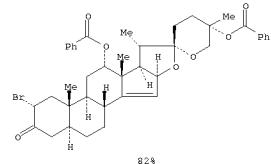
L6 ANSWER 9 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(8) OF 78



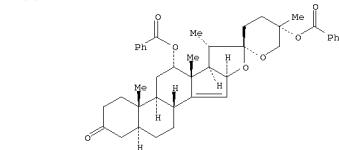
L6 ANSWER 9 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(9) OF 78



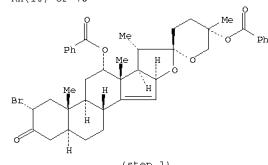
NOTE: other product also detected

RX(8) OF 78



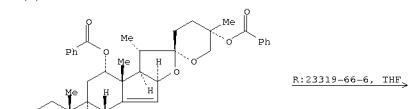
NOTE: mol. sieves used

RX(10) OF 78

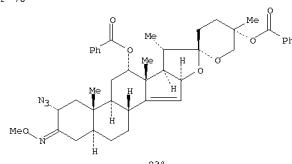


1. (Me<sub>2</sub>N)<sub>2</sub>C:NH.HN<sub>3</sub>, MeOH  
 2. MeONH<sub>2</sub>-HCl, CH<sub>2</sub>Cl<sub>2</sub>, Pyridine

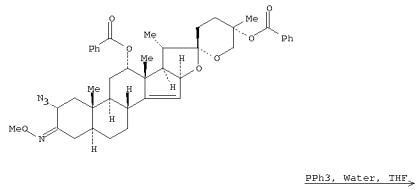
RX(9) OF 78



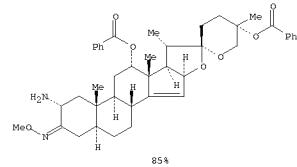
RX(10) OF 78



RX(11) OF 78



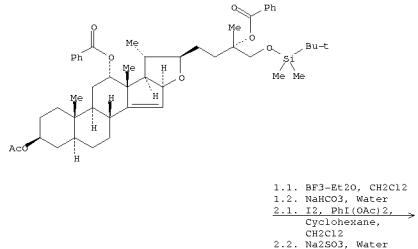
RX(11) OF 78



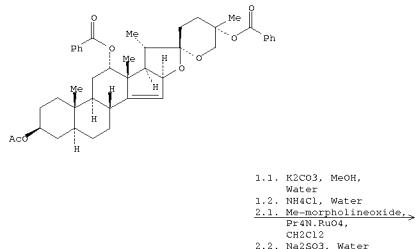
NOTE: Staudinger reduction

RX(12) OF 78 - REACTION DIAGRAM NOT AVAILABLE

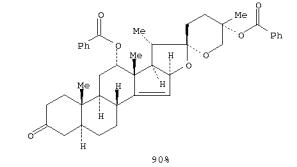
RX(16) OF 78 - 2 STEPS



RX(18) OF 78 - 2 STEPS

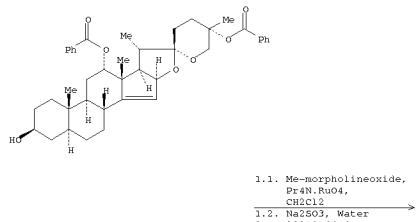


RX(18) OF 78 - 2 STEPS

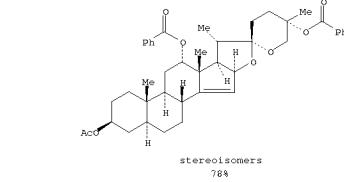


NOTE: 2) mol. sieves used

RX(19) OF 78 - 2 STEPS

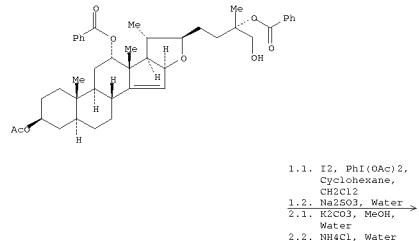


RX(16) OF 78 - 2 STEPS

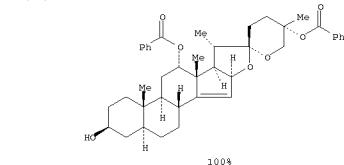


NOTE: 2) Suarez oxidn.

RX(17) OF 78 - 2 STEPS

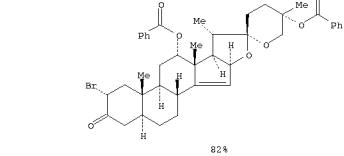


RX(17) OF 78 - 2 STEPS



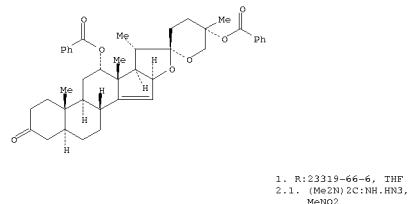
NOTE: 1) Suarez oxidn.

RX(19) OF 78 - 2 STEPS

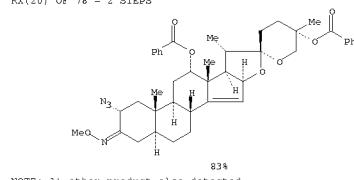


NOTE: 1) mol. sieves used, 2) other product also detected

RX(20) OF 78 - 2 STEPS



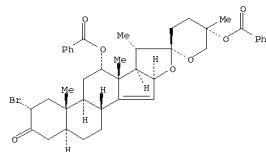
RX(20) OF 78 - 2 STEPS



NOTE: 1) other product also detected

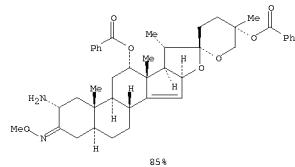
16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(21) OF 78 - 2 STEPS



1.1.  $(Me_2N)_2C:NH.NHN_3$ ,  
MeONa  
1.2. MeONa-HCl,  
CH2Cl2, Pyridine  
2. PPh3, Water, THF

RX(21) OF 78 - 2 STEPS



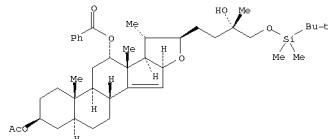
NOTE: 2) Staudinger reduction

RX(22) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(23) OF 78 - REACTION DIAGRAM NOT AVAILABLE

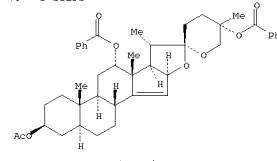
16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(27) OF 78 - 3 STEPS

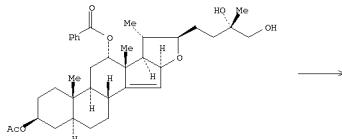


1. Benzal anhydride,  
MgBr2-Et2O, Et2N,  
CH2Cl2  
2.1. BF3-Et2O, CH2Cl2  
2.2. NaHCO3, Water  
3.1. DMAP(OAc)2,  
Cyclohexane,  
CH2Cl2  
3.2. Na2SO3, Water

RX(27) OF 78 - 3 STEPS

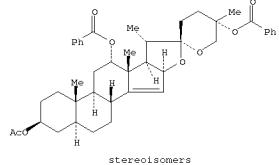
NOTE: 1) stereoselective, other isomer also detected, overall  
yield=87% for diastereomers, 59:10 (2S5):(2S5R), 3) Suarez oxidn.

RX(28) OF 78 - 4 STEPS

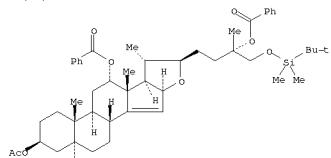


16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(28) OF 78 - 4 STEPS

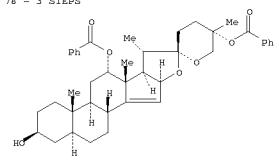
NOTE: 2) stereoselective, other isomer also detected, overall  
yield=87% for diastereomers, 59:10 (2S5):(2S5R), 4) Suarez oxidn.

RX(29) OF 78 - 3 STEPS



1.1. BF3-Et2O, CH2Cl2  
1.2. NaHCO3, Water  
2.1. DMAP(OAc)2,  
Cyclohexane,  
CH2Cl2  
2.2. Na2SO3, Water  
3.1. K2CO3, MeOH,  
Water  
3.2. NH4Cl, Water

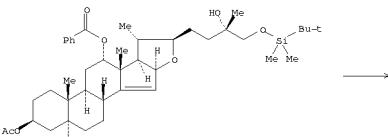
RX(29) OF 78 - 3 STEPS



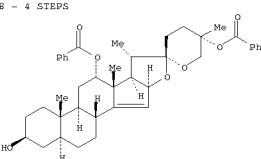
NOTE: 2) Suarez oxidn.

16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

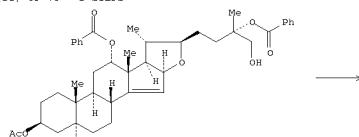
RX(30) OF 78 - 4 STEPS



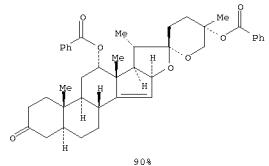
RX(30) OF 78 - 4 STEPS

NOTE: 1) stereoselective, other isomer also detected, overall  
yield=87% for diastereomers, 59:10 (2S5):(2S5R), 3) Suarez oxidn.

RX(31) OF 78 - 3 STEPS

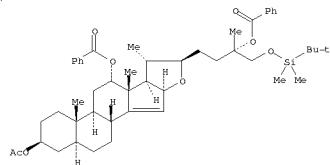


RX(31) OF 78 - 3 STEPS



NOTE: 1) Suarez oxidn., 3) mol. sieves used

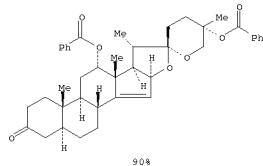
RX(32) OF 78 - 4 STEPS



RX(32) OF 78 - 4 STEPS

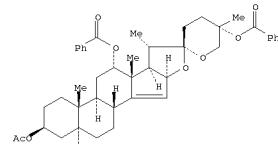
- 1.1.  $\text{BF}_3\text{-Et}_2\text{O}$ ,  $\text{CH}_2\text{Cl}_2$
- 1.2.  $\text{NaHCO}_3$ , Water
- 2.1.  $\text{I}_2$ ,  $\text{Pb}(\text{OAc})_2$ , Cyclohexane,  $\text{CH}_2\text{Cl}_2$
- 2.2.  $\text{Na}_2\text{SO}_3$ , Water
- 3.1.  $\text{K}_2\text{CO}_3$ , MeOH, Water
- 3.2.  $\text{NH}_4\text{Cl}$ , Water
- 4.1. Me-morpholineoxide,

RX(32) OF 78 - 4 STEPS



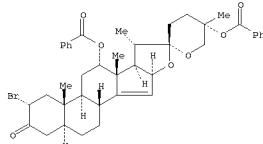
NOTE: 2) Suarez oxidn., 4) mol. sieves used

RX(33) OF 78 - 3 STEPS



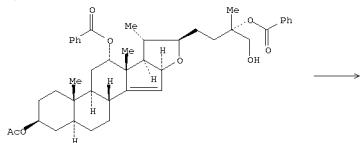
- 1.1.  $\text{K}_2\text{CO}_3$ , MeOH, Water
- 1.2.  $\text{NH}_4\text{Cl}$ , Water
- 2.1. Me-morpholineoxide,  $\text{Pr}^4\text{N-RuO}_4$ ,  $\text{CH}_2\text{Cl}_2$
- 2.2.  $\text{Na}_2\text{SO}_3$ , Water
3. R:23319-66-6, THF

RX(33) OF 78 - 3 STEPS

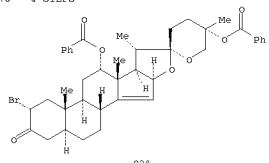


NOTE: 2) mol. sieves used, 3) other product also detected

RX(34) OF 78 - 4 STEPS

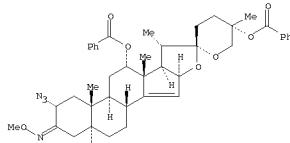


RX(34) OF 78 - 4 STEPS



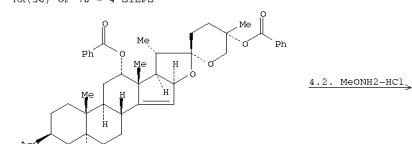
NOTE: 1) Suarez oxidn., 3) mol. sieves used, 4) other product also detected

RX(35) OF 78 - 3 STEPS



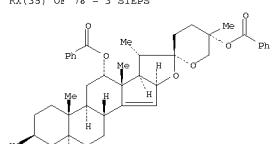
NOTE: 1) mol. sieves used, 2) other product also detected

RX(36) OF 78 - 4 STEPS



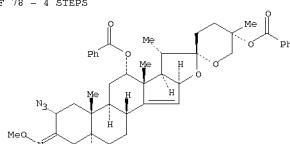
NOTE: 2) mol. sieves used, 3) other product also detected

RX(35) OF 78 - 3 STEPS



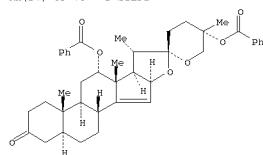
- 1.1. Me-morpholineoxide,  $\text{Pr}^4\text{N-RuO}_4$ ,  $\text{CH}_2\text{Cl}_2$
- 1.2.  $\text{Na}_2\text{SO}_3$ , Water
2. R:23319-66-6, THF  $\rightarrow$
- 3.1.  $(\text{Me}_2\text{N})_2\text{C=NNH}_3$ ,  $\text{MeOH}$
- 3.2.  $\text{MeONH}_2\text{-HCl}$ ,  $\text{CH}_2\text{Cl}_2$ , Pyridine

RX(36) OF 78 - 4 STEPS



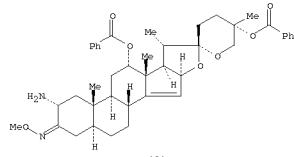
NOTE: 2) mol. sieves used, 3) other product also detected

RX(37) OF 78 - 3 STEPS



1. R:23319-66-6, THF  
2.1. (Me2N)2C:NH.RNa,  
MeNO2  
2.2. MeONHZ-HCl,  
CH2Cl2, Pyridine  
3. PPh3, Water, THF

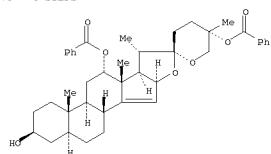
RX(37) OF 78 - 3 STEPS



85%

NOTE: 1) other product also detected, 3) Staudinger reduction

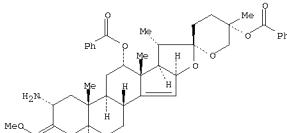
RX(38) OF 78 - 4 STEPS



RX(38) OF 78 - 4 STEPS

1. 1. Me-morpholineoxide,  
Pr4N.RuO4,  
CH2Cl2  
1.2. Na2SO4, Water  
2. I. (Me2N)2C:NH.RNa,  
MeNO2  
3. 2. MeONHZ-HCl,  
CH2Cl2, Pyridine  
4. PPh3, Water, THF

RX(38) OF 78 - 4 STEPS



85%

NOTE: 1) mol. sieves used, 2) other product also detected, 4) Staudinger reduction

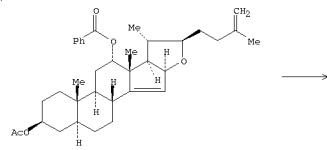
RX(39) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(40) OF 78 - REACTION DIAGRAM NOT AVAILABLE

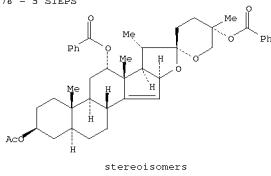
RX(41) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(42) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(43) OF 78 - 5 STEPS



RX(43) OF 78 - 5 STEPS

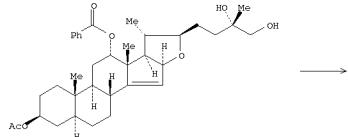


stereoisomers

78%

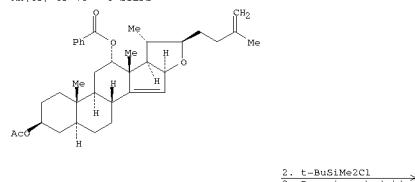
NOTE: 1) stereoselective, other isomer also detected, overall yield=64% for diastereomers, 59:10 (2S): (2R), 3) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S):(2R), 5) Suarez oxidn.

RX(44) OF 78 - 5 STEPS

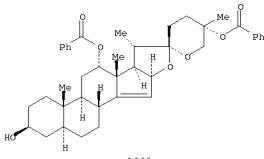


→

RX(45) OF 78 - 6 STEPS

2. t-BuSiMe2Cl  
3. Benzoic anhydride →

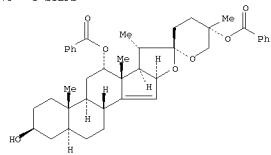
RX(45) OF 78 - 6 STEPS



100%

NOTE: 1) stereoselective, other isomer also detected, overall yield=96% for diastereomers, 59:10 (2S):(2R), 3) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S):(2R), 5) Suarez oxidn.

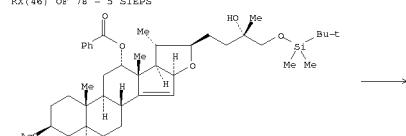
RX(44) OF 78 - 5 STEPS



100%

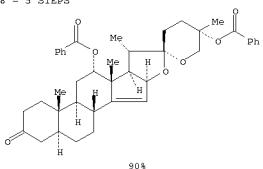
NOTE: 2) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S):(2R), 4) Suarez oxidn.

RX(46) OF 78 - 5 STEPS



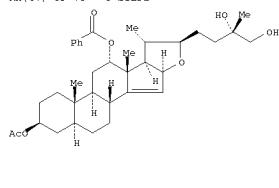
→

## RX(46) OF 78 - 5 STEPS



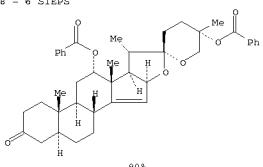
NOTE: 1) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S): (2R), 3) Suarez oxidn., 5) mol. sieves used

## RX(47) OF 78 - 6 STEPS



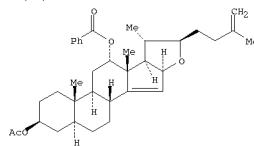
1. t-BuSiMe<sub>2</sub>Cl  
2. Benzoic anhydride

## RX(47) OF 78 - 6 STEPS



NOTE: 2) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S): (2R), 4) Suarez oxidn., 6) mol. sieves used

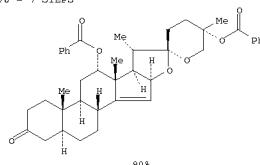
## RX(48) OF 78 - 7 STEPS



2. t-BuSiMe<sub>2</sub>Cl

3. Benzoic anhydride

## RX(48) OF 78 - 7 STEPS

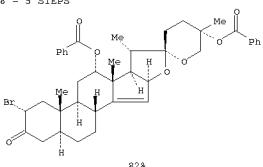


NOTE: 1) stereoselective, other isomer also detected, overall yield=96% for diastereomers, 59:10 (2S): (2R), 3) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S): (2R), 5) Suarez oxidn., 7) mol. sieves used

## RX(49) OF 78 - 5 STEPS

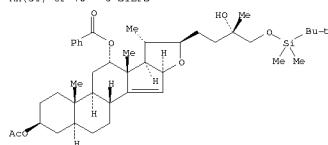
- 1.1. BF<sub>3</sub>-Et<sub>2</sub>O, CH<sub>2</sub>Cl<sub>2</sub>
- 1.2. NaHCO<sub>3</sub>, Water
- 2.1. I<sub>2</sub>, PhI(OAc)<sub>2</sub>, Cyclohexane, CH<sub>2</sub>Cl<sub>2</sub>
- 2.2. Na<sub>2</sub>SO<sub>3</sub>, Water
- 3.1. K<sub>2</sub>CO<sub>3</sub>, MeOH, Water
- 3.2. NH<sub>4</sub>Cl, Water
- 4.1. Me-morpholineoxide,

## RX(49) OF 78 - 5 STEPS



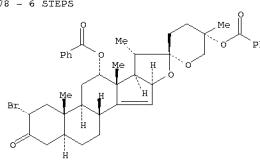
NOTE: 2) Suarez oxidn., 4) mol. sieves used, 5) other product also detected

## RX(50) OF 78 - 6 STEPS



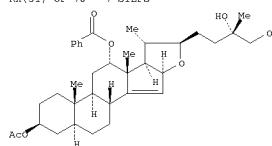
1. Benzoic anhydride

## RX(50) OF 78 - 6 STEPS



NOTE: 1) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S): (2R), 3) Suarez oxidn., 5) mol. sieves used, 6) other product also detected

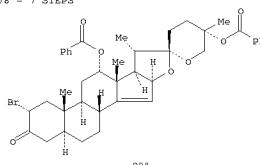
## RX(51) OF 78 - 7 STEPS



1. t-BuSiMe<sub>2</sub>Cl

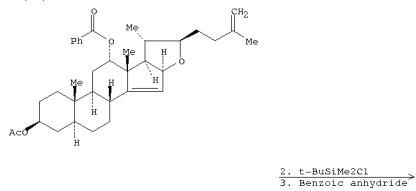
2. Benzoic anhydride

## RX(51) OF 78 - 7 STEPS

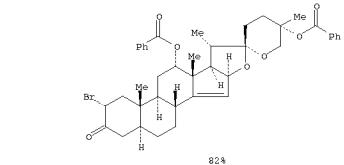


NOTE: 2) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S): (2R), 4) Suarez oxidn., 6) mol. sieves used, 7) other product also detected

RX(52) OF 78 - 8 STEPS

2. t-BuSiMe<sub>2</sub>Cl  
3. Benzic anhydride

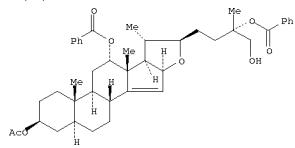
RX(52) OF 78 - 8 STEPS



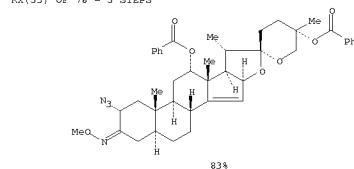
82%

NOTE: 1) stereoselective, other isomer also detected, overall yield=6% for diastereomers, 59:10 (2S):(2R), 3) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S):(2R), 5) Suarez oxidn., 7) mol. sieves used, 8) other product also detected

RX(53) OF 78 - 5 STEPS

5.2. MeONH<sub>2</sub>-HCl

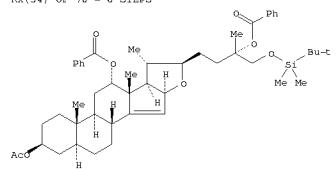
RX(53) OF 78 - 5 STEPS



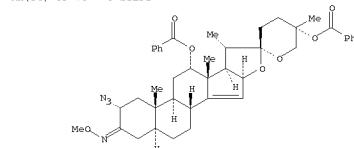
83%

NOTE: 1) Suarez oxidn., 3) mol. sieves used, 4) other product also detected

RX(54) OF 78 - 6 STEPS

6.2. MeONH<sub>2</sub>-HCl

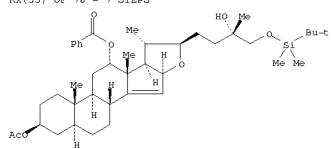
RX(54) OF 78 - 6 STEPS



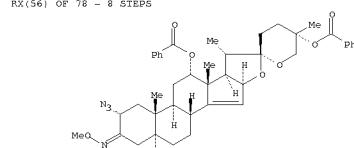
83%

NOTE: 2) Suarez oxidn., 4) mol. sieves used, 5) other product also detected

RX(55) OF 78 - 7 STEPS

7.2. MeONH<sub>2</sub>-HCl

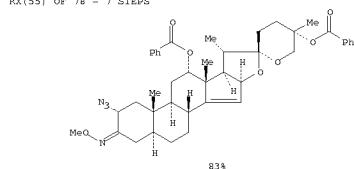
RX(56) OF 78 - 8 STEPS



83%

NOTE: 2) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S):(2R), 4) Suarez oxidn., 6) mol. sieves used, 7) other product also detected

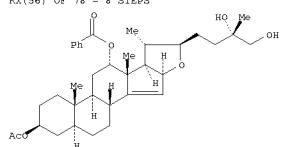
RX(55) OF 78 - 7 STEPS



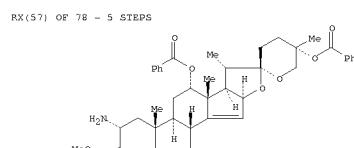
83%

NOTE: 1) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (2S):(2R), 3) Suarez oxidn., 5) mol. sieves used, 6) other product also detected

RX(56) OF 78 - 8 STEPS

1. t-BuSiMe<sub>2</sub>Cl  
2. Benzic anhydride  
3. MeONH<sub>2</sub>-HCl

RX(57) OF 78 - 5 STEPS

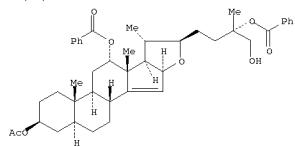


85%

NOTE: 2) mol. sieves used, 3) other product also detected, 5) Staudinger reduction

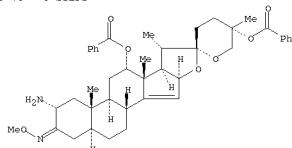
16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(58) OF 78 - 6 STEPS



9.2. MeONH2-HCl →

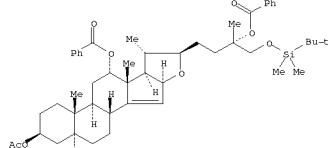
RX(58) OF 78 - 6 STEPS



85%

NOTE: 1) Suarez oxidn., 3) mol. sieves used, 4) other product also detected, 6) Staudinger reduction

RX(59) OF 78 - 7 STEPS



9.2. MeONH2-HCl →

16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(63) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(64) OF 78 - REACTION DIAGRAM NOT AVAILABLE

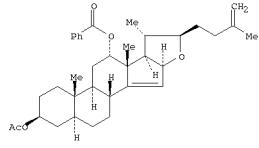
RX(65) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(66) OF 78 - REACTION DIAGRAM NOT AVAILABLE

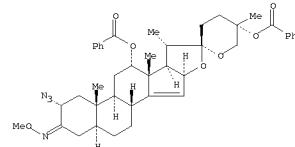
RX(67) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(68) OF 78 - REACTION DIAGRAM NOT AVAILABLE

RX(69) OF 78 - 9 STEPS

2. t-BuSiMe2Cl  
3. Benzoic anhydride  
9.2. MeONH2-HCl →

RX(69) OF 78 - 9 STEPS

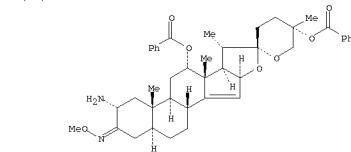


83%

NOTE: 1) stereoselective, other isomer also detected, overall yield=96% for diastereomers, 59:10 (25S):(25R), 3) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (25S):(25R), 4) Suarez oxidn., 6) mol. sieves used, 7) other product also detected, 9) Staudinger reduction

16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

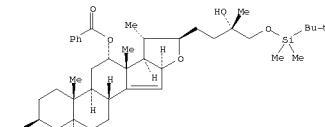
RX(59) OF 78 - 7 STEPS



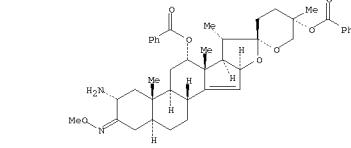
85%

NOTE: 2) Suarez oxidn., 4) mol. sieves used, 5) other product also detected, 7) Staudinger reduction

RX(60) OF 78 - 8 STEPS

1. Benzoic anhydride →  
7.2. MeONH2-HCl

RX(60) OF 78 - 8 STEPS



85%

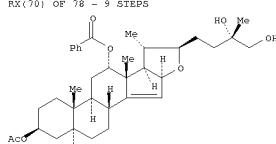
NOTE: 1) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (25S):(25R), 3) Suarez oxidn., 5) mol. sieves used, 6) other product also detected, 8) Staudinger reduction

RX(61) OF 78 - REACTION DIAGRAM NOT AVAILABLE

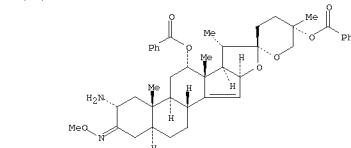
RX(62) OF 78 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 9 OF 30 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(70) OF 78 - 9 STEPS

1. t-BuSiMe2Cl  
2. Benzoic anhydride  
9.2. MeONH2-HCl →

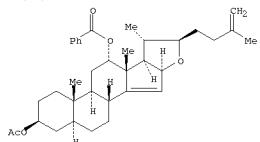
RX(70) OF 78 - 9 STEPS



85%

NOTE: 2) stereoselective, other isomer also detected, overall yield=87% for diastereomers, 59:10 (25S):(25R), 4) Suarez oxidn., 6) mol. sieves used, 7) other product also detected, 9) Staudinger reduction

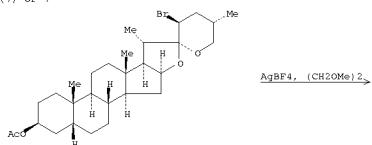
RX(71) OF 78 - 10 STEPS

2. t-BuSiMe2Cl  
3. Benzoic anhydride  
9.2. MeONH2-HCl →

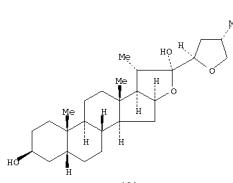


16 ANSWER 10 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

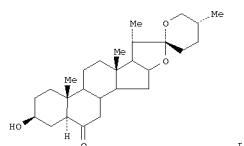
RX(?) OF ?



RX(?) OF ?

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

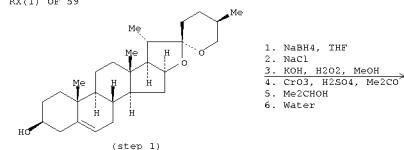
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
AN 134:311351 CASREACT  
TI Spirostanic analogues of teasterone. Synthesis, characterization and biological activity of laxogenin, ( $(2S)$ )-hydroxylaxogenin and  $\Delta^{23}$ -ketolaxogenin and  $\Delta^{23}$ -ketolaxogenin.  
AU Manchado, Francisco A.; Perez Gil, Roxana; Martinez, Carlos S. Perez;  
C5 Laboratorio de Productos Naturales, Facultad de Química, Universidad de La  
SO Bahana, La Habana, 10 400, Cuba  
JOURNAL OF THE CHEMICAL SOCIETY, PERKIN TRANSACTIONS 1 (2001),  
(3) 261-266  
CODEN: JCSPCE; ISSN: 1472-7781  
PB Royal Society of Chemistry  
DI Journal  
LA English  
GI



AB The synthesis and characterization of the naturally occurring steroid sapogenin laxogenin I and its derivatives,  $\Delta^{23}$ -ketolaxogenin and ( $(2S)$ )-hydroxylaxogenin are described. Compds. reported have shown plant-growth-stimulating activity in in vitro tests and in field trials.

RX(1) OF 59

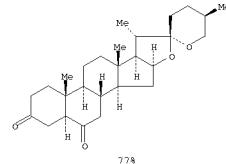
RX(1) OF 59



(step 1)

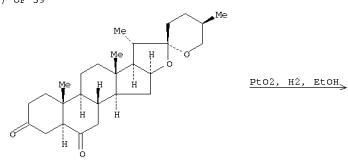
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(1) OF 59

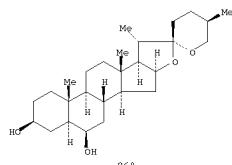


NOTE: stereoselective

RX(2) OF 59



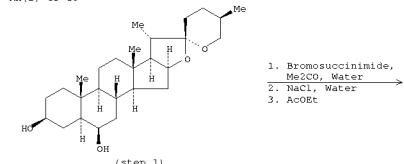
RX(2) OF 59



NOTE: stereoselective

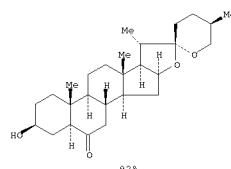
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(3) OF 59



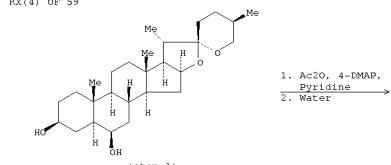
(step 1)

RX(3) OF 59



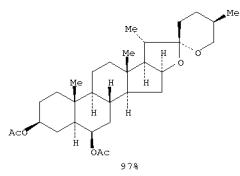
NOTE: stereoselective

RX(4) OF 59



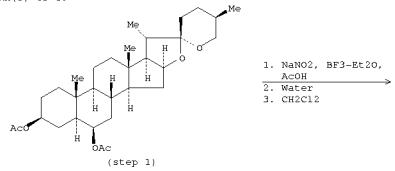
(step 1)

RX(4) OF 59

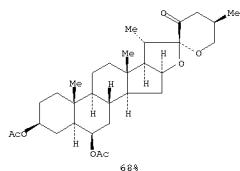


NOTE: stereoselective

RX(5) OF 59

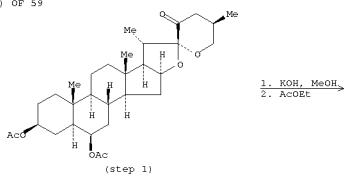


RX(5) OF 59

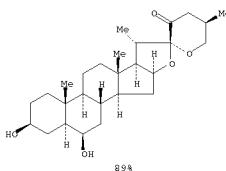


NOTE: stereoselective

RX(6) OF 59

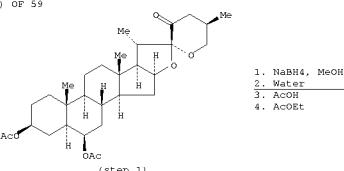


RX(6) OF 59

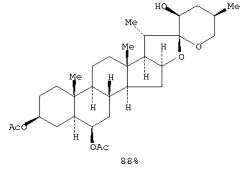


NOTE: stereoselective

RX(7) OF 59

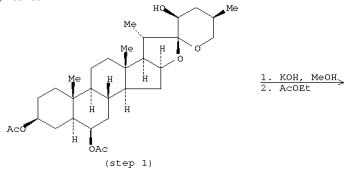


RX(7) OF 59

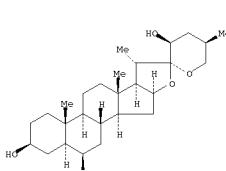


NOTE: stereoselective

RX(9) OF 59

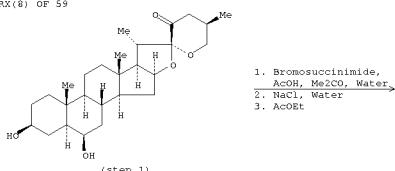


RX(9) OF 59



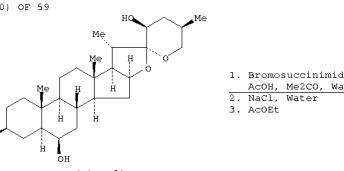
NOTE: stereoselective

RX(8) OF 59



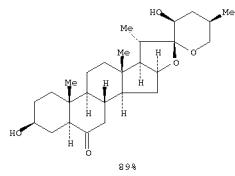
NOTE: stereoselective

RX(9) OF 59



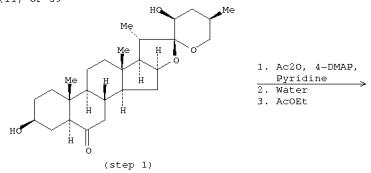
NOTE: stereoselective

RX(10) OF 59



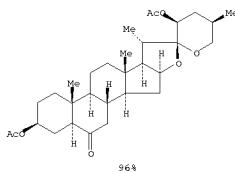
NOTE: stereoselective

RX(11) OF 59



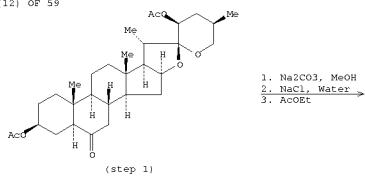
1.  $\text{Ac}_2\text{O}$ , 4-DMAP,  
Pyridine  
2. Water  
3.  $\text{Ac}_2\text{O}$

RX(11) OF 59



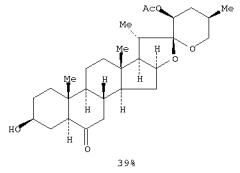
NOTE: stereoselective

RX(12) OF 59



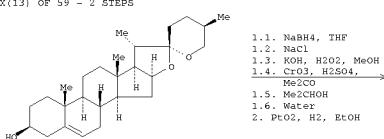
1.  $\text{Na}_2\text{CO}_3$ ,  $\text{MeOH}$   
2.  $\text{NaCl}$ , Water  
3.  $\text{Ac}_2\text{O}$

RX(12) OF 59



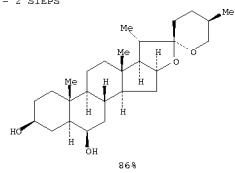
NOTE: stereoselective

RX(13) OF 59 - 2 STEPS



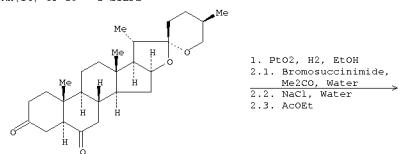
1.1.  $\text{NaBH}_4$ , THF  
1.2.  $\text{NaBH}_4$ ,  $\text{H}_2\text{O}_2$ ,  $\text{MeOH}$   
1.3.  $\text{Cr}(\text{O}_2)_2$ ,  $\text{H}_2\text{SO}_4$ ,  $\text{Me}_2\text{CO}$   
1.4.  $\text{Me}_2\text{CO}$   
1.5.  $\text{Me}_2\text{CHOR}$   
1.6. Water  
2.  $\text{PtO}_2$ ,  $\text{H}_2$ ,  $\text{EtOH}$

RX(13) OF 59 - 2 STEPS



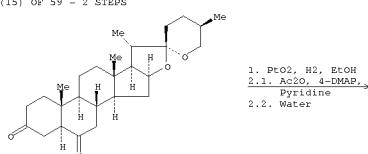
NOTE: 1) stereoselective, 2) stereoselective

RX(14) OF 59 - 2 STEPS



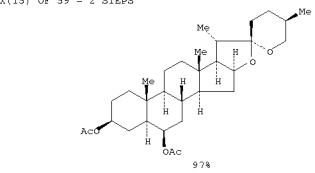
1.  $\text{Pto}_2$ ,  $\text{H}_2$ ,  $\text{EtOH}$   
2.1.  $\text{Bromosuccinimide}$ ,  
 $\text{Me}_2\text{CO}$ , Water  
2.2.  $\text{Ac}_2\text{O}$ , Water  
2.3.  $\text{Ac}_2\text{O}$

RX(15) OF 59 - 2 STEPS



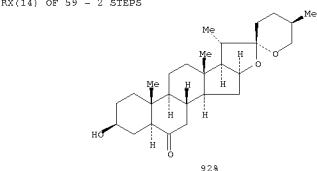
1.  $\text{Pto}_2$ ,  $\text{H}_2$ ,  $\text{EtOH}$   
2.1.  $\text{Ac}_2\text{O}$ , 4-DMAP,  
Pyridine  
2.2. Water

RX(15) OF 59 - 2 STEPS



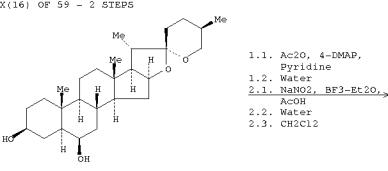
NOTE: 1) stereoselective, 2) stereoselective

RX(14) OF 59 - 2 STEPS



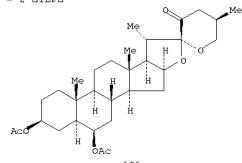
NOTE: 1) stereoselective, 2) stereoselective

RX(16) OF 59 - 2 STEPS



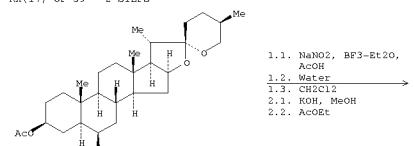
1.1.  $\text{Ac}_2\text{O}$ , 4-DMAP,  
Pyridine  
1.2. Water  
2.1.  $\text{NaNO}_2$ ,  $\text{BF}_3\text{-Et}_2\text{O}$ ,  
 $\text{AcOH}$   
2.2. Water  
2.3.  $\text{CH}_2\text{Cl}_2$

RX(16) OF 59 - 2 STEPS



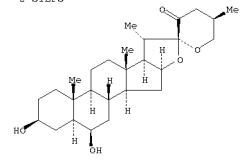
NOTE: 1) stereoselective, 2) stereoselective

RX(17) OF 59 - 2 STEPS

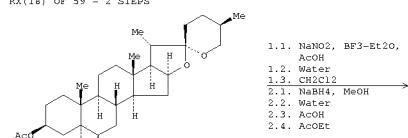


NOTE: 1) stereoselective, 2) stereoselective

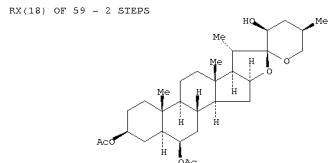
RX(18) OF 59 - 2 STEPS



RX(18) OF 59 - 2 STEPS

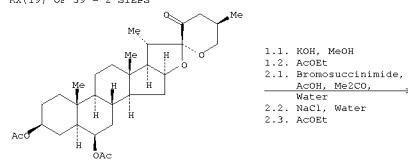


RX(18) OF 59 - 2 STEPS

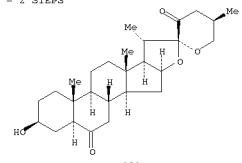


NOTE: 1) stereoselective, 2) stereoselective

RX(19) OF 59 - 2 STEPS

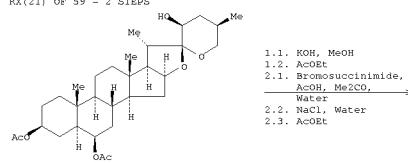


RX(19) OF 59 - 2 STEPS

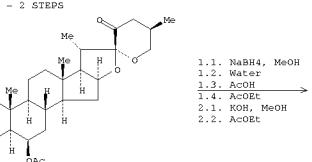


NOTE: 1) stereoselective, 2) stereoselective

RX(21) OF 59 - 2 STEPS



RX(20) OF 59 - 2 STEPS

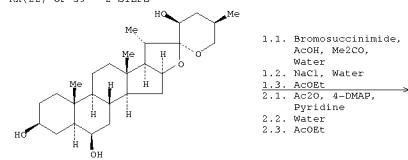


RX(20) OF 59 - 2 STEPS



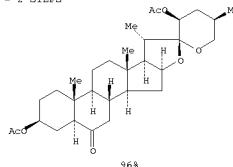
NOTE: 1) stereoselective, 2) stereoselective

RX(21) OF 59 - 2 STEPS



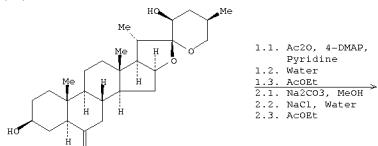
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(22) OF 59 - 2 STEPS



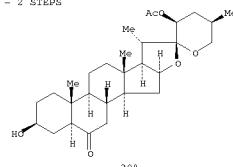
NOTE: 1) stereoselective, 2) stereoselective

RX(23) OF 59 - 2 STEPS



1.1. Ac<sub>2</sub>O, 4-DMAP,  
Pyridine  
1.2. Water  
1.3. AcOH  
2.1. Na<sub>2</sub>CO<sub>3</sub>, MeOH  
2.2. NaCl, Water  
2.3. AcOEt

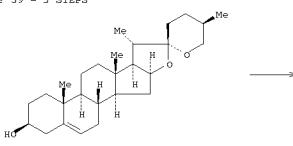
RX(23) OF 59 - 2 STEPS



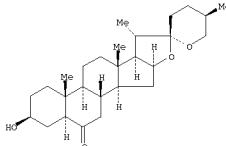
NOTE: 1) stereoselective, 2) stereoselective

16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(24) OF 59 - 3 STEPS

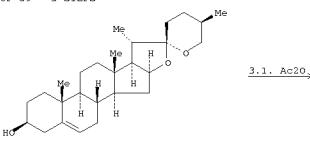


RX(24) OF 59 - 3 STEPS



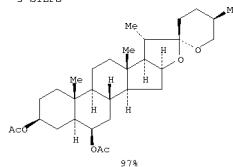
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(25) OF 59 - 3 STEPS



16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

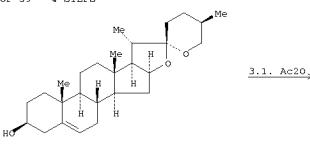
RX(25) OF 59 - 3 STEPS



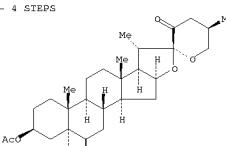
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(27) OF 59 - 4 STEPS

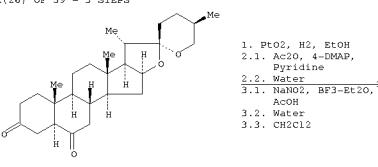


RX(27) OF 59 - 4 STEPS



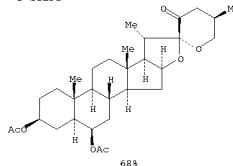
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

RX(26) OF 59 - 3 STEPS



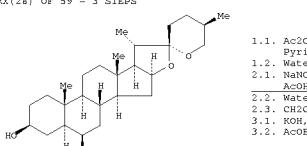
1. Pd/C, H<sub>2</sub>, EtOH  
2.1. Ac<sub>2</sub>O, 4-DMAP,  
Pyridine  
2.2. Water  
3.1. NaNO<sub>2</sub>, BF<sub>3</sub>-Et<sub>2</sub>O,  
AcOH  
3.2. Water  
3.3. CH<sub>2</sub>Cl<sub>2</sub>

RX(26) OF 59 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

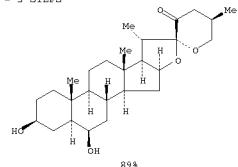
RX(28) OF 59 - 3 STEPS



1.1. Ac<sub>2</sub>O, 4-DMAP,  
Pyridine  
1.2. Water  
2.1. NaNO<sub>2</sub>, BF<sub>3</sub>-Et<sub>2</sub>O,  
AcOH  
2.2. Water  
2.3. CH<sub>2</sub>Cl<sub>2</sub>  
3.1. KOH, MeOH  
3.2. AcOEt

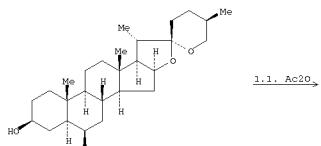
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(28) OF 59 - 3 STEPS

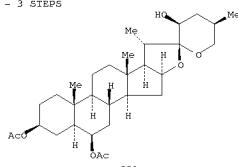


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(29) OF 59 - 3 STEPS



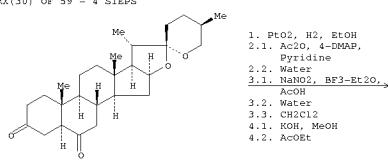
RX(29) OF 59 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

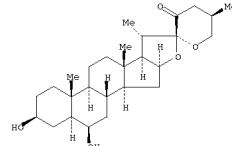
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(30) OF 59 - 4 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

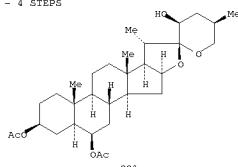
RX(30) OF 59 - 4 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

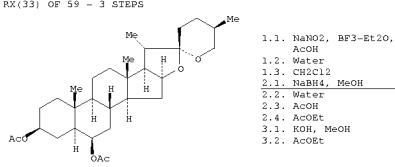
RX(31) OF 59 - 4 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

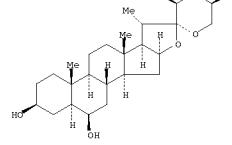
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(33) OF 59 - 3 STEPS



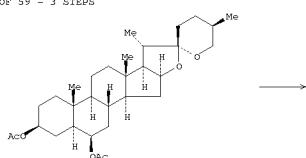
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(33) OF 59 - 3 STEPS

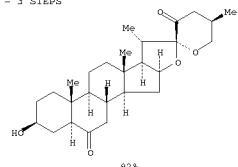


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(32) OF 59 - 3 STEPS

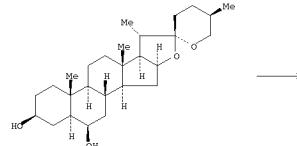


RX(32) OF 59 - 3 STEPS



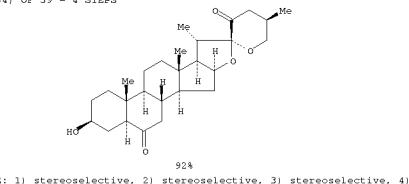
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(34) OF 59 - 4 STEPS



16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

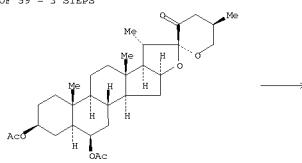
RX(34) OF 59 - 4 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

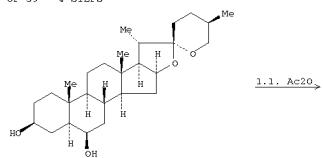
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(36) OF 59 - 3 STEPS



RX(36) OF 59 - 3 STEPS

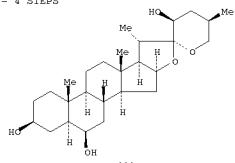
RX(35) OF 59 - 4 STEPS



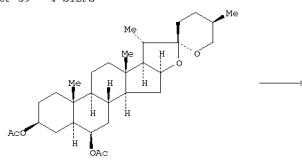
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(35) OF 59 - 4 STEPS

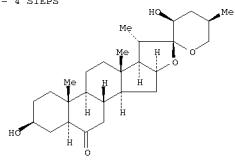


RX(37) OF 59 - 4 STEPS



16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

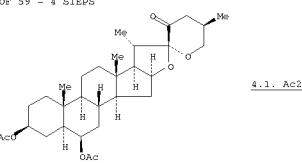
RX(37) OF 59 - 4 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

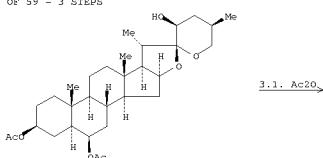
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(39) OF 59 - 4 STEPS



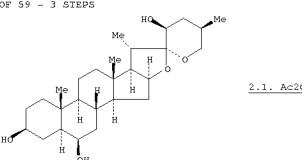
RX(39) OF 59 - 4 STEPS

RX(38) OF 59 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

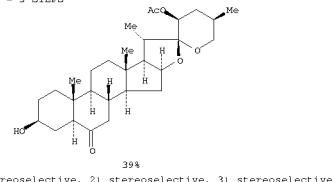
RX(38) OF 59 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

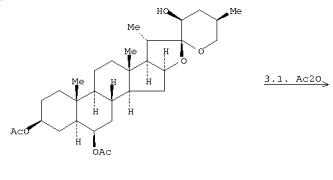
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(40) OF 59 - 3 STEPS

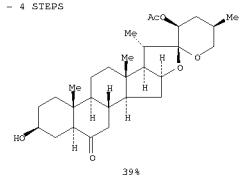


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(41) OF 59 - 4 STEPS



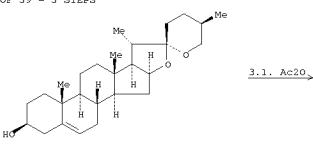
RX(41) OF 59 - 4 STEPS



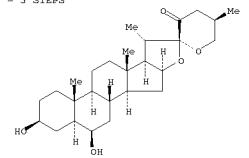
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective

16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(42) OF 59 - 5 STEPS

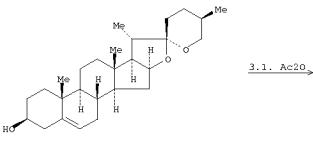


RX(42) OF 59 - 5 STEPS



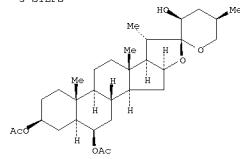
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective

RX(43) OF 59 - 5 STEPS



16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

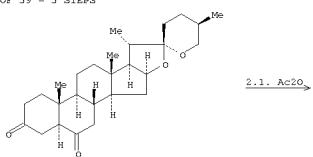
RX(43) OF 59 - 5 STEPS



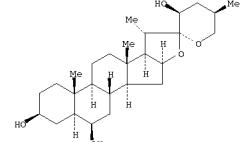
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective

16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(45) OF 59 - 5 STEPS

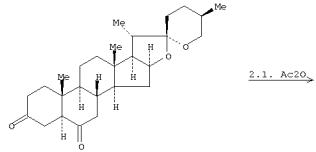


RX(45) OF 59 - 5 STEPS

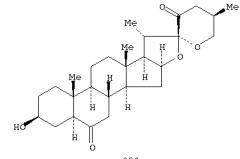


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective

RX(44) OF 59 - 5 STEPS

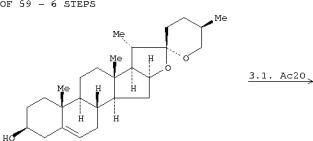


RX(44) OF 59 - 5 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective

RX(46) OF 59 - 6 STEPS

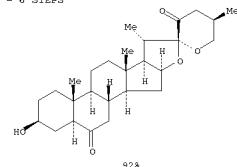


RX(46) OF 59 - 6 STEPS



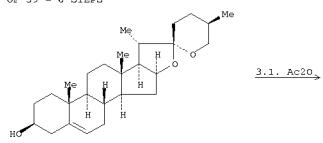
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(46) OF 59 - 6 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective

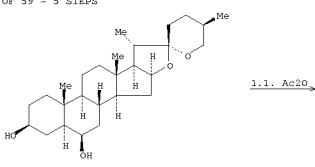
RX(47) OF 59 - 6 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective

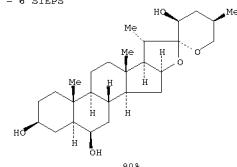
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(48) OF 59 - 5 STEPS

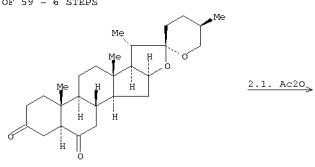


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective

RX(49) OF 59 - 6 STEPS



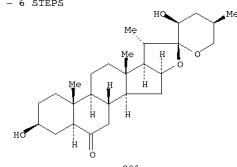
RX(49) OF 59 - 6 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective

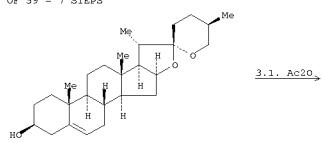
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(49) OF 59 - 6 STEPS

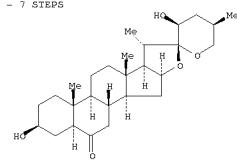


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective

RX(50) OF 59 - 7 STEPS



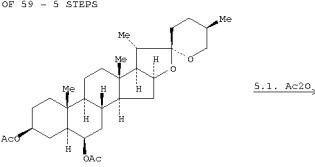
RX(50) OF 59 - 7 STEPS



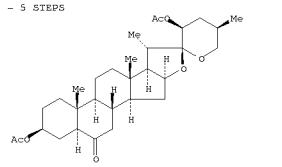
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective, 7) stereoselective

16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(51) OF 59 - 5 STEPS

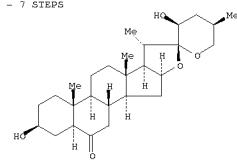


RX(51) OF 59 - 5 STEPS

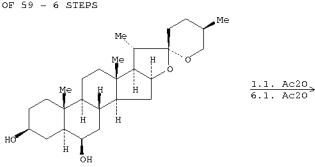


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective

RX(52) OF 59 - 6 STEPS



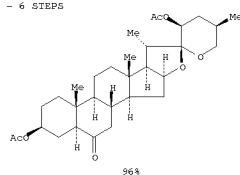
RX(52) OF 59 - 6 STEPS



1.1. Ac2O

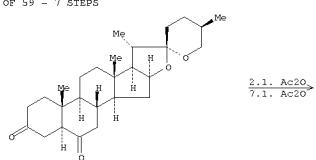
6.1. Ac2O

RX(52) OF 59 - 6 STEPS



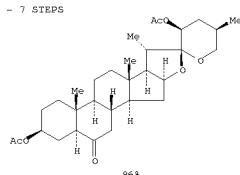
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective, 5) stereoselective, 6) stereoselective

RX(53) OF 59 - 7 STEPS



$\xrightarrow[7.1. \text{ Ac}2\text{O}]{2.1. \text{ Ac}2\text{O}}$

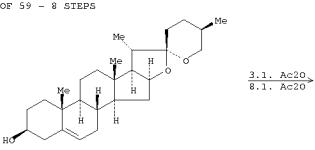
RX(53) OF 59 - 7 STEPS



96%

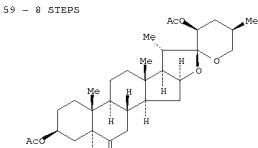
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective, 5) stereoselective, 6) stereoselective, 7)  
stereoselective

RX(54) OF 59 - 8 STEPS



$\xrightarrow[8.1. \text{ Ac}2\text{O}]{3.1. \text{ Ac}2\text{O}}$

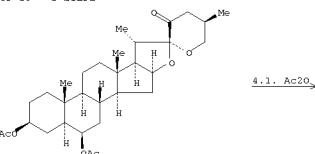
RX(54) OF 59 - 8 STEPS



96%

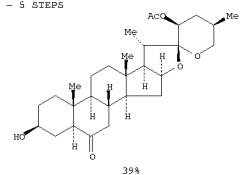
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective, 5) stereoselective, 6) stereoselective, 7)  
stereoselective, 8) stereoselective

RX(55) OF 59 - 5 STEPS



$\xrightarrow{4.1. \text{ Ac}2\text{O}}$

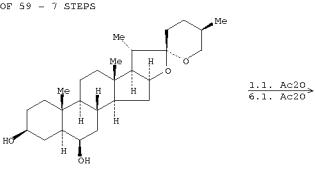
RX(55) OF 59 - 5 STEPS



96%

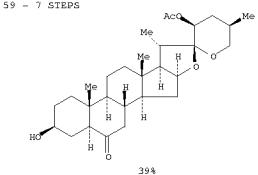
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective, 5) stereoselective

RX(57) OF 59 - 7 STEPS



$\xrightarrow[6.1. \text{ Ac}2\text{O}]{1.1. \text{ Ac}2\text{O}}$

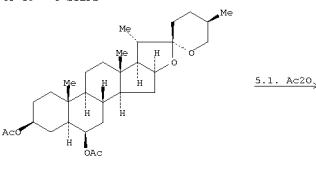
RX(57) OF 59 - 7 STEPS



96%

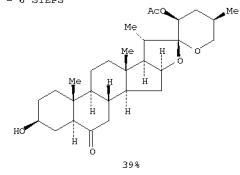
NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective, 5) stereoselective, 6) stereoselective, 7)  
stereoselective

RX(56) OF 59 - 6 STEPS



$\xrightarrow{5.1. \text{ Ac}2\text{O}}$

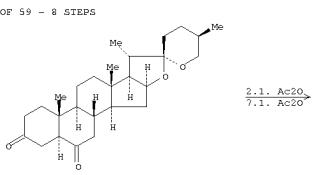
RX(56) OF 59 - 6 STEPS



96%

NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4)  
stereoselective, 5) stereoselective, 6) stereoselective

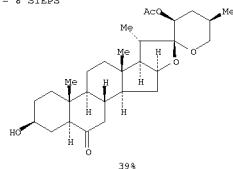
RX(58) OF 59 - 8 STEPS



$\xrightarrow[7.1. \text{ Ac}2\text{O}]{2.1. \text{ Ac}2\text{O}}$

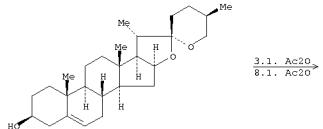
16 ANSWER 11 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(58) OF 59 - 8 STEPS

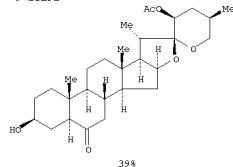


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective, 7) stereoselective, 8) stereoselective

RX(59) OF 59 - 9 STEPS



RX(59) OF 59 - 9 STEPS

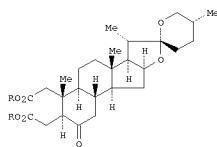


NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective, 4) stereoselective, 5) stereoselective, 6) stereoselective, 7) stereoselective, 8) stereoselective, 9) stereoselective

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

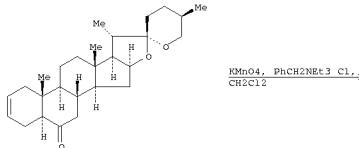
16 ANSWER 12 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 134:163201 CASREACT  
TI Synthesis of A-seco-spirostan from diosgenin in catalysis conditions by phase transfer  
AU Leyva-Gavilan, Hubert; Anaya; Morales, Juan Enrique Taconorte; Pedrosa, MariaTeresa; Cabrera; Martinez, Carlos Perez; Molinet, Marleny Enriqu  
CS Universidad Pedagogica "Blas Roca Calderon" Manzanillo, Granma, Cuba  
SO Revista CENIC, Ciencias Quimicas (2000), 31(2), 119-122  
PB CENIC: RCCQCR; ISSN: 1015-8553  
DT Journal  
LA Spanish  
GI

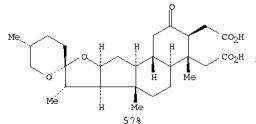


AB The oxidation of (25R)-spirost-2-en-6-one, obtained from diosgenin, with KMnO<sub>4</sub> in aqueous-organic biphasic systems under phase transfer catalytic conditions afford (25R)-2<sub>a</sub>,3<sub>a</sub>-dihydroxyspirost-6-one, and A-seco-diacid I (I; R = H (III)) in satisfactory yields. The preliminary biol. activity for II and its Me ester (I; R = Me) is also reported.

RX(1) OF 3

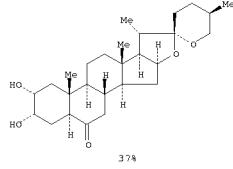


RX(1) OF 3



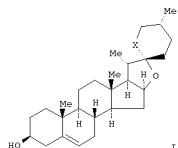
16 ANSWER 12 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(1) OF 3



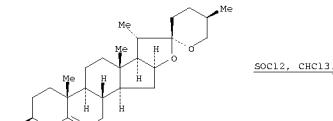
16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 134:131706 CASREACT  
TI New derivatives of the steroidal compounds solasodine and diosgenin. Part 2  
AU Ibrametov, M. P.; Dzhembaev, B. Zh.; Kharlamova, T. V.  
CS Inst. Nauk. Nauk. Nauchno-tekhnicheskogo Instituta im. A. B. Bekturova, Nauk. Respublik. Kazakhstan  
SO Izvestiya Ministerstva Obrazovaniya i Nauki Respubliki Kazakhstan, Natsional'noi Akademii Nauk Respubliki Kazakhstan, Seriya Khimicheskaya (2000), (2), 7-12  
CBP: AIO VAKH RK  
DT Journal  
LA Russian  
GI

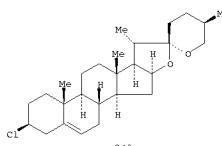


AB Through a succession of synthetic conversions starting from solasodine (I; X = NH) and diosgenin (I; X = O) the synthesis of brassinosteroids were carried out, exhibiting interest as regulators of plant germination.

RX(2) OF 40



RX(2) OF 40



NOTE: stereoselective

RX(3) OF 3 - 2 STEPS

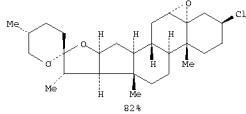
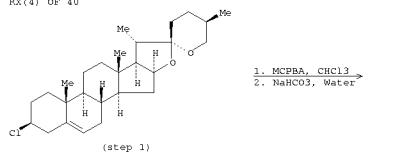


NOTE: 2) acid catalyst

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

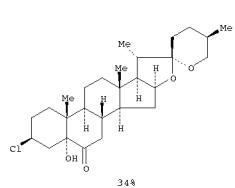
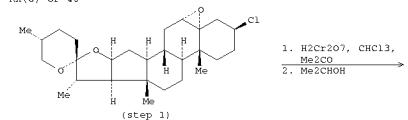
16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(4) OF 40



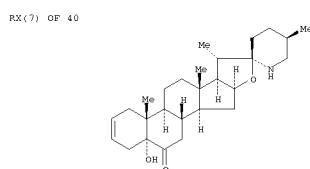
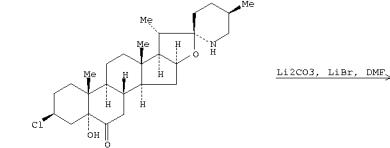
NOTE: stereoselective

RX(6) OF 40



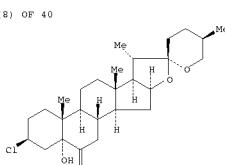
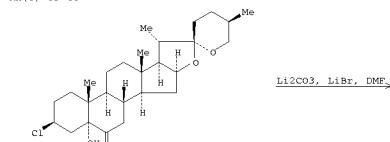
16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(7) OF 40



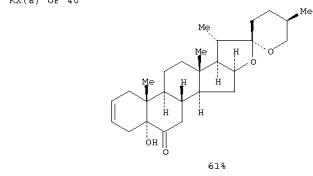
NOTE: regioselective

RX(8) OF 40



16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(8) OF 40

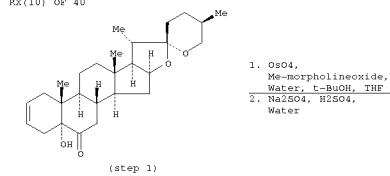


61%

NOTE: regioselective

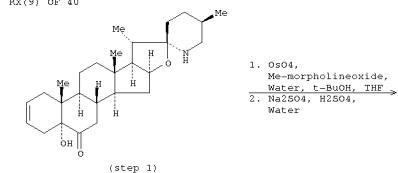
16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(10) OF 40



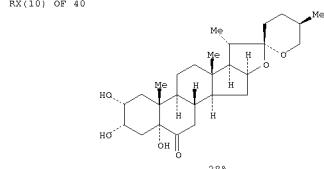
(step 1)

RX(9) OF 40



26%

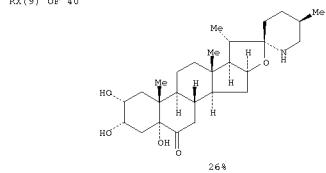
RX(10) OF 40



28%

NOTE: stereoselective

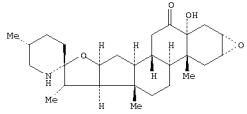
RX(11) OF 40



26%

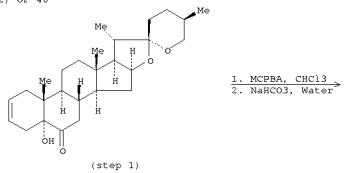
NOTE: stereoselective

RX(11) OF 40

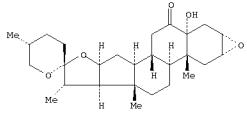


NOTE: stereoselective

RX(12) OF 40

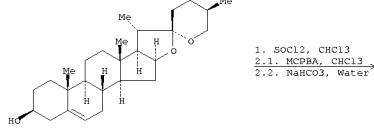


RX(12) OF 40



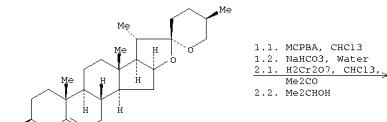
NOTE: stereoselective

RX(14) OF 40 - 2 STEPS



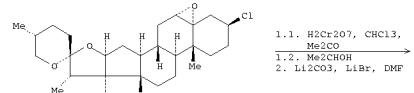
NOTE: 1) stereoselective, 2) stereoselective

RX(16) OF 40 - 2 STEPS

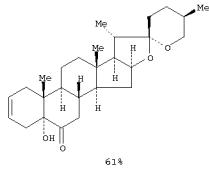


NOTE: 1) stereoselective

RX(18) OF 40 - 2 STEPS

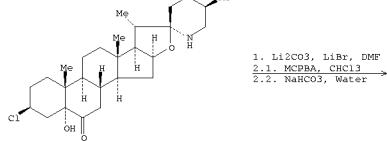


RX(18) OF 40 - 2 STEPS



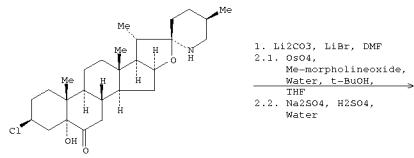
NOTE: 2) regioselective

RX(20) OF 40 - 2 STEPS

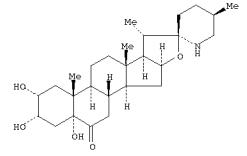


NOTE: 1) regioselective, 2) stereoselective

RX(19) OF 40 - 2 STEPS

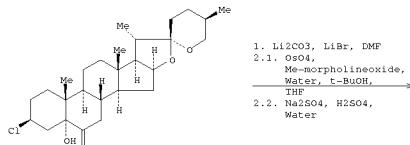


RX(19) OF 40 - 2 STEPS



NOTE: 1) regioselective, 2) stereoselective

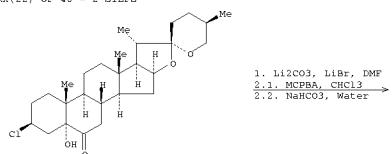
RX(21) OF 40 - 2 STEPS



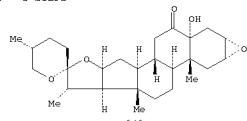
NOTE: 1) regioselective, 2) stereoselective

16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(22) OF 40 - 2 STEPS

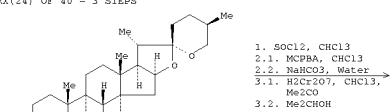


RX(22) OF 40 - 2 STEPS



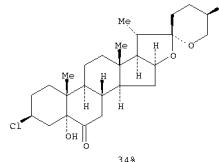
NOTE: 1) regioselective, 2) stereoselective

RX(24) OF 40 - 3 STEPS



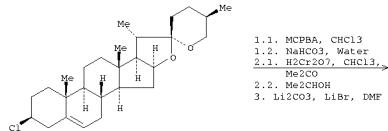
16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(24) OF 40 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective

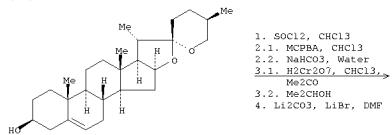
RX(27) OF 40 - 3 STEPS



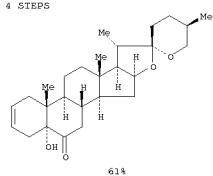
NOTE: 1) stereoselective, 3) regioselective

16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(28) OF 40 - 4 STEPS

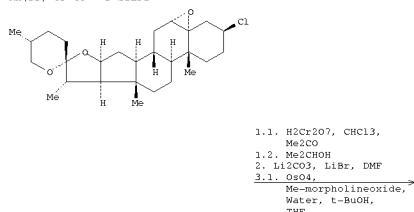


RX(28) OF 40 - 4 STEPS



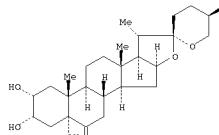
NOTE: 1) stereoselective, 2) stereoselective, 4) regioselective

RX(33) OF 40 - 3 STEPS



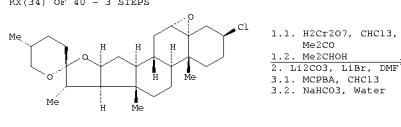
16 ANSWER 13 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(33) OF 40 - 3 STEPS



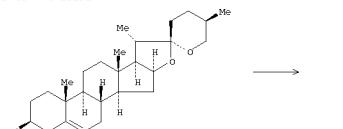
NOTE: 2) regioselective, 3) stereoselective

RX(34) OF 40 - 3 STEPS

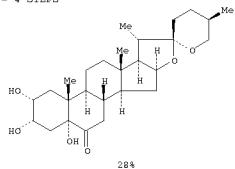


NOTE: 2) regioselective, 3) stereoselective

RX(35) OF 40 - 4 STEPS

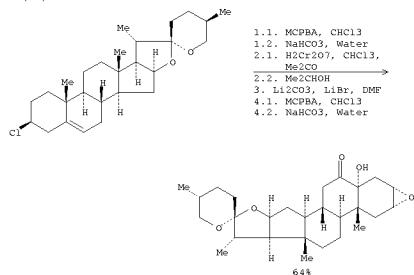


RX(35) OF 40 - 4 STEPS



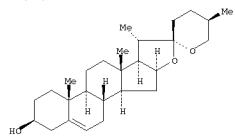
NOTE: 1) stereoselective, 3) regioselective, 4) stereoselective

RX(36) OF 40 - 4 STEPS



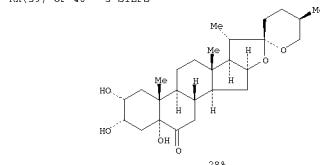
NOTE: 1) stereoselective, 3) regioselective, 4) stereoselective

RX(39) OF 40 - 5 STEPS



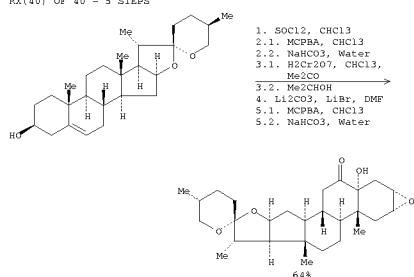
1. SOCl2, CHCl3  
2. 1. MCPBA, CHCl3  
2.2. NaHCO3, Water  
3.1. H2Cr2O7, CHCl3,  
Me2CO  
3.2. Me2CHOH  
4. Li2CO3, LiBr, DMF  
5.1. OsO4  
Me-morpholineoxide,  
Water, t-BuOH.

RX(39) OF 40 - 5 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 4) regioselective, 5) stereoselective

RX(40) OF 40 - 5 STEPS

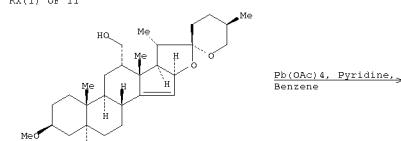


NOTE: 1) stereoselective, 2) stereoselective, 4) regioselective, 5) stereoselective

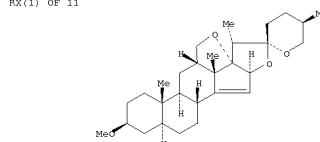
AN 133:350391 CASREACT

TI Synthesis of cytostatic tetradeacyclic pyrazines and a novel reduction-oxidation sequence for spiroketal opening in saponins  
AU Böller, Siegfried; Brünig, Michael; Jautelat, Rolf; Winterfeldt, Ekkehard  
CS Institut für Pflanzenteile, Sering AG, Berlin, D-13342, Germany  
GO Helvetica Chimica Acta (2000), 83(8), 1854-1860  
CODEN: HCACAV; ISSN: 0018-019X  
PB Verlag Helvetica Chimica Acta  
DT JUN 2000  
LA English  
AB Aiming towards spiroketal-modified artificial cephalostatin mols., two orthogonal approaches were investigated. First, the introduction of 17-one functionality into hecogenin derivs. with a closed spiroketal moiety was accomplished by different reduction-oxidation sequences. This allowed the synthesis of selectively modified artificial cephalostatin mols., with improved tumor-inhibiting properties. Second, a novel reduction-oxidation pathway for spiroketal opening in saponins was discovered, which should provide the basis for a broad access towards spiroketal-modified building blocks for cephalostatins.

RX(1) OF 11

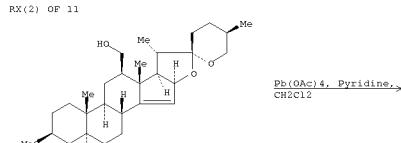


RX(1) OF 11

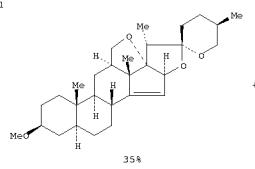


NOTE: photochem.

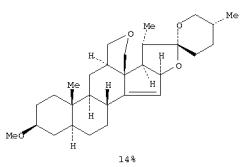
RX(2) OF 11



RX(2) OF 11

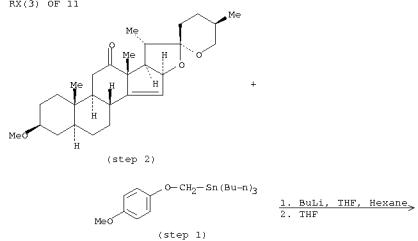


RX(2) OF 11

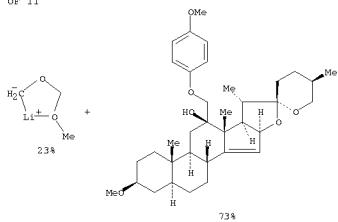


NOTE: photochem.

RX(3) OF 11

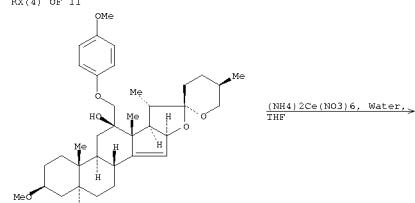


RX(3) OF 11

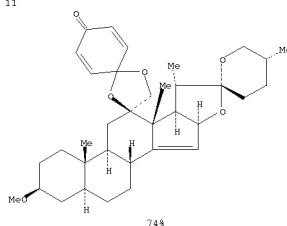


NOTE: stereoselective

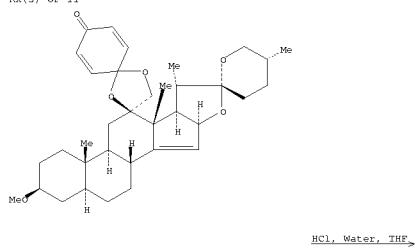
RX(4) OF 11



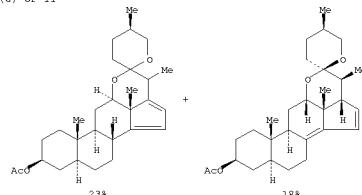
RX(4) OF 11



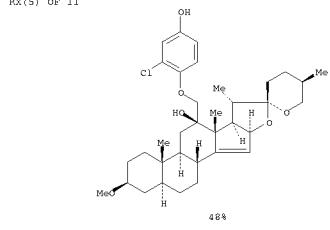
RX(5) OF 11



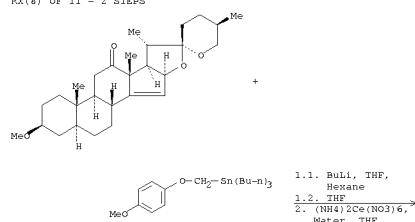
RX(6) OF 11



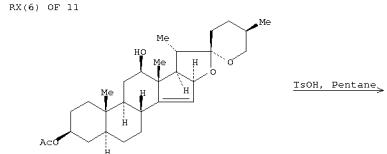
RX(5) OF 11



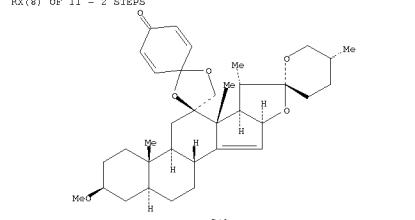
RX(8) OF 11 - 2 STEPS



RX(6) OF 11



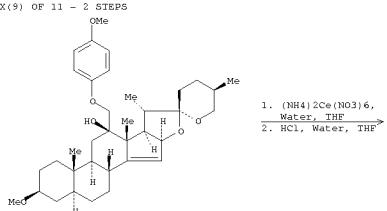
RX(8) OF 11 - 2 STEPS



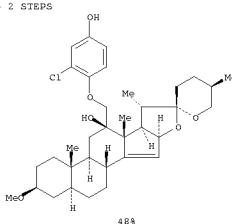
NOTE: 1) stereoselective

16 ANSWER 14 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

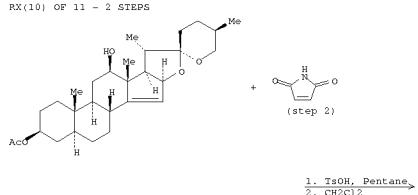
RX(9) OF 11 - 2 STEPS



RX(9) OF 11 - 2 STEPS

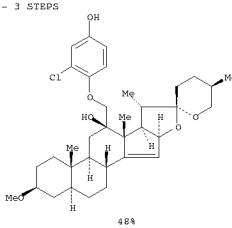


RX(10) OF 11 - 2 STEPS



16 ANSWER 14 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(11) OF 11 - 3 STEPS

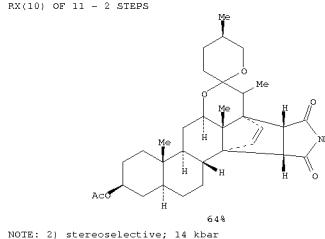


NOTE: 1) stereoselective

RE.CNT 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

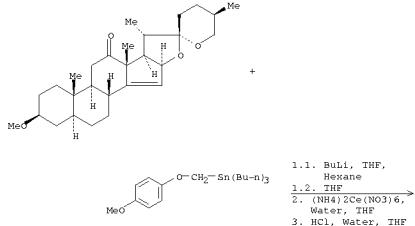
16 ANSWER 14 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(10) OF 11 - 2 STEPS



NOTE: 2) stereoselective; 14 kbar

RX(11) OF 11 - 3 STEPS



16 ANSWER 15 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

16 ANSWER 15 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

AN 133:150781 CASREACT

TI Synthesis and spectroscopic characterization of 25(R)-2 $\beta$ ,3 $\alpha$ -dihydroxy-5 $\alpha$ -spirostan-12-one and its 12 $\alpha$ -oxalactone

AU Pinedo, M.; Diaz, M.; Rodriguez, Francisco Coll; Rodiles, Isabel; Jimenez, Martinez, Carlos S.; Perez, Beccera, Esther M.; Alonso, Angulo, Uleana Ramirez; Reyes-Gavilan, Hubert Anaya

CS Laboratorio de Productos Naturales, Facultad de Quimica, Universidad de La Habana, Havana, 10400, Cuba

SO Revista CENIC, Ciencias Quimicas (1999), 30(2), 107-110

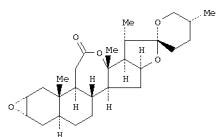
Coden: RCCQER; ISSN: 1015-8553

PB Centro Nacional de Investigaciones Cientificas

DT Journal

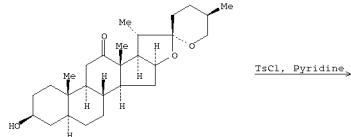
LA Spanish

GI

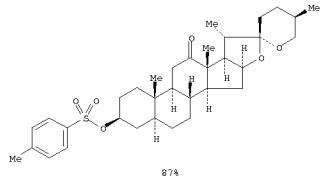


AB Preparation of brassinosteroid spirostanes, (25R)-2 $\beta$ ,3 $\alpha$ -dihydroxy-5 $\alpha$ -spirostan-12-one and (25R)-2 $\beta$ ,3 $\alpha$ -dihydroxy-C-homo-12 $\alpha$ -oxa-5 $\alpha$ -spirostan-12-one starting from hecogenin was described. The condensation with C-methyl- $\alpha$ -ketobutyric acid gave (25R)-2 $\beta$ ,3 $\alpha$ -dihydroxy-5 $\alpha$ -spirostan-12-one in 60%. Use of m-chlorobenzoic acid, the simultaneous functioning of rings A and C was achieved obtaining 2 $\alpha$ ,3 $\alpha$ -epoxy-12 $\alpha$ -oxalactone I in 71% yield. During the cleavage of oxirane ring, of this epoxylactone with perchloric acid in acetone, (25R)-2 $\beta$ ,3 $\alpha$ -dihydroxy-C-homo-12 $\alpha$ -oxa-5 $\alpha$ -spirostan-12-one in 65% yield was obtained.

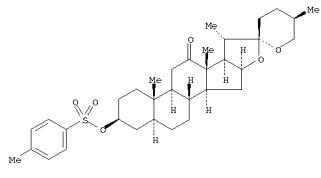
RX(1) OF 16



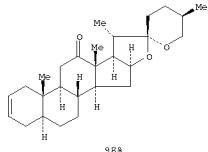
RX(1) OF 16



RX(2) OF 16

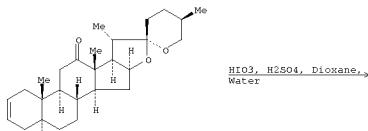
 $\xrightarrow{\text{LiBr, Li2CO3, DMF}}$ 

RX(2) OF 16

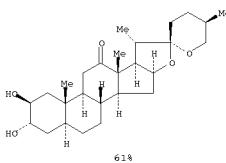


NOTE: reflux

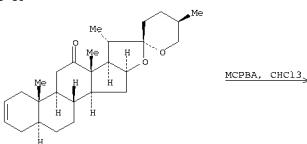
RX(3) OF 16



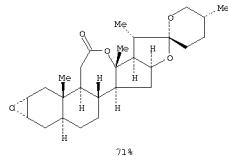
RX(3) OF 16



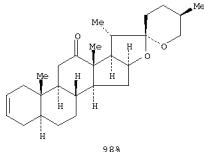
RX(4) OF 16



RX(4) OF 16

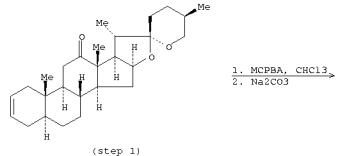


RX(7) OF 16 - 2 STEPS

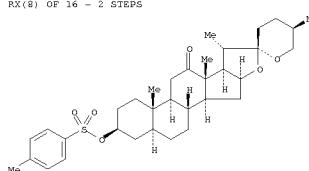


NOTE: 2) reflux

RX(5) OF 16

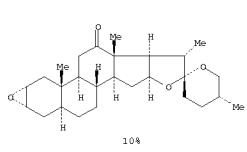


RX(6) OF 16 - 2 STEPS

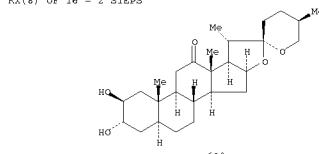


1. LiBr, Li2CO3, DMF  
2. HIO3, H2SO4,  
Dioxane, Water

RX(5) OF 16

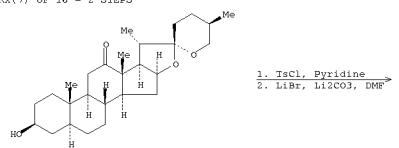


RX(8) OF 16 - 2 STEPS



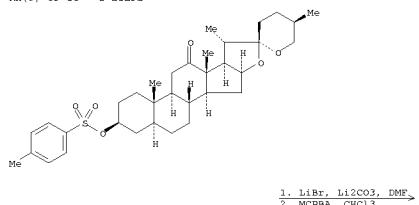
NOTE: 1) reflux

RX(7) OF 16 - 2 STEPS

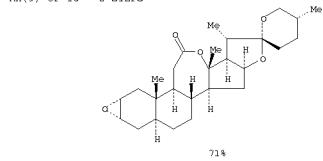


16 ANSWER 15 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(9) OF 16 - 2 STEPS

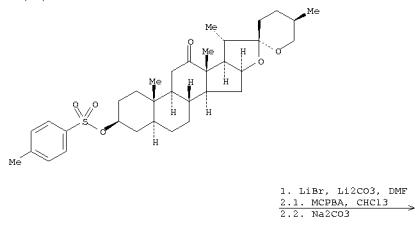


RX(9) OF 16 - 2 STEPS



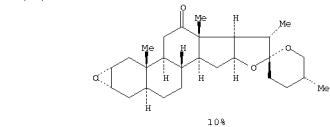
NOTE: 1) reflux

RX(10) OF 16 - 2 STEPS



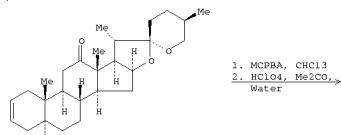
16 ANSWER 15 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(10) OF 16 - 2 STEPS

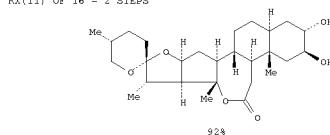


NOTE: 1) reflux

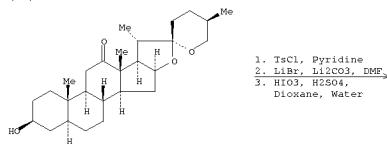
RX(11) OF 16 - 2 STEPS



RX(11) OF 16 - 2 STEPS

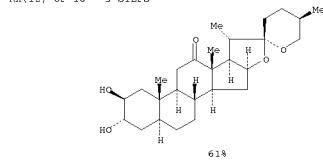


RX(12) OF 16 - 3 STEPS



16 ANSWER 15 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

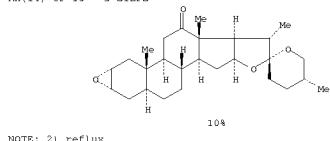
RX(12) OF 16 - 3 STEPS



NOTE: 2) reflux

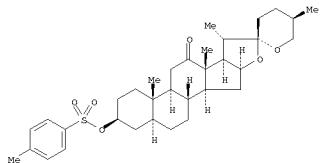
16 ANSWER 15 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(14) OF 16 - 3 STEPS

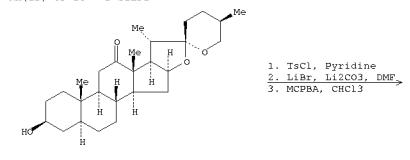


NOTE: 2) reflux

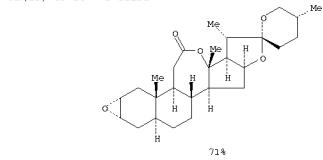
RX(15) OF 16 - 3 STEPS



RX(13) OF 16 - 3 STEPS

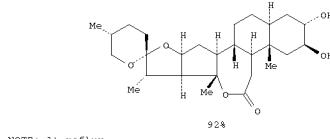


RX(13) OF 16 - 3 STEPS



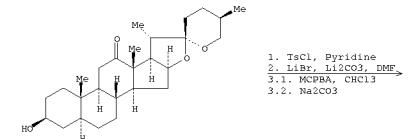
NOTE: 2) reflux

RX(15) OF 16 - 3 STEPS



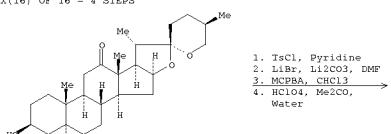
NOTE: 1) reflux

RX(14) OF 16 - 3 STEPS

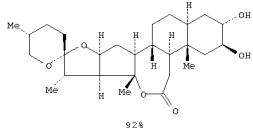


16 ANSWER 16 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(16) OF 16 - 4 STEPS



RX(16) OF 16 - 4 STEPS

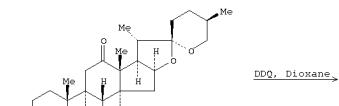


NOTE: 2) reflux

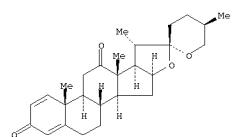
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

16 ANSWER 16 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
AN 130:125271 CASREACT  
TI Simple and convenient method for the synthesis of  $\Delta^9(11)$ -3-hydroxy,  $\Delta^1$ - and  $\Delta^1,4,9(11)$ -3-ketosteroids by selective dehydrogenation of 3-hydroxy-12-ketosteroids  
AU Kongkathip, Boonsong; Kongkathip, Ngampong; Khunnavutimanotum, Ponsak;  
Sakee, Uthai  
C5 Department of Chemistry, Faculty of Science, Kasetsart University,  
Bangkok, 10900 Thailand  
SO Chemical Letters (1994), (12), 1207-1208  
CODEN: CMLEBG; ISSN: 0266-7022  
PB Chemical Society of Japan  
DT Journal  
LA English  
AB Steroid can be selectively dehydrogenated to the corresponding  $\Delta^9(11)$ -3-hydroxysteroid,  $\Delta^1$ -4- and  $\Delta^1,4,9(11)$ -3-ketosteroids by the treatment of 2,3-dichloro-5,6-dicyanobenzoquinone (DDQ) with a variety of solvents.

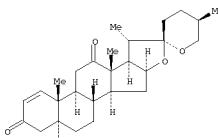
RX(1) OF 3



RX(1) OF 3



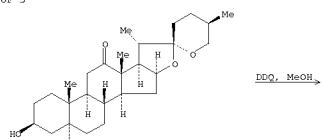
RX(1) OF 3



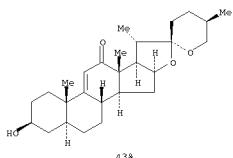
NOTE: 38% overall

16 ANSWER 16 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(2) OF 3



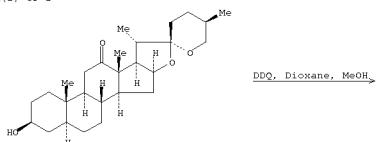
RX(2) OF 3



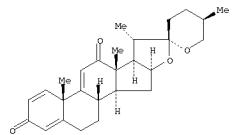
NOTE: 38% overall

16 ANSWER 16 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)  
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(3) OF 3



RX(3) OF 3



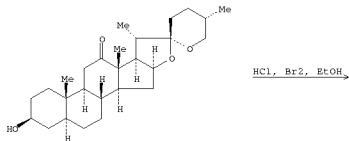
NOTE: 38% overall

L6 ANSWER 17 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 129:192548 CASREACT  
 TI Sound absorbing and heat insulating materials and their manufacture  
 IN Machino, Fumikazu; Higo, Tsuyoshi; Kataoka, Toshinobu; Onoue, Ryochi;  
 Date, Hiroko; Matsunori  
 PA Osaka Gas Co., Ltd.; Japan  
 SO PCT Int. Appl., S2 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 PAN.CNT 1

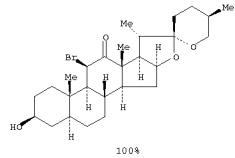
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO-----9838140	A	19980903	199700-JP0000598	19970227
PI W-----	W	19980903		
EP-----963964	A1	19991215	1997EP-000095419	19970227
EP-----963964	B1	20031210		
R-----	DE, FR, GB			
JP-----963964	B2	20000214	1998JP-000527490	19970227
US-----6055299	B1	20050225	1999US-000180422	19990212
PRAI 199700-JP0000598				19970227

AB The sound absorbing and heat insulating material comprises carbon fiber as its constituent material and have good durability and compression recovering property, lightweight, fire resistance, and good corrosion resistance. The material is composed of carbon fibers having an average diameter of 0.5-5 μm and have an average fiber length of 1-15 mm which are bonded by a thermosetting resin. A galvanic cell comprising the sound absorbing and heat insulating material as one of electrodes, an aluminum plate as the other of electrodes, and an electrolyte, which comprises a water solution having sodium chloride of 0.45 weight %, has a galvanic current of >10 μA.

RX(1) OF 1



RX(1) OF 1

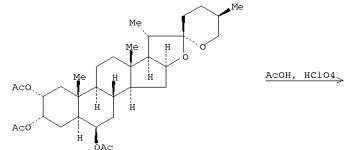


RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

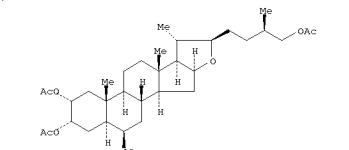
L6 ANSWER 18 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 129:41308 CASREACT  
 TI Synthesis of (22R)-25R-2α,3α,26-trihydroxy-5α-furostan-6-one  
 AU Arribalzaga, Martin A.; Iglesias, Cil; Rozena Perez; Lara, Vivian Leliebre; Martinez, Carlos S.; Perez; Marchado, Francisco Coll  
 CS Laboratorio de Productos Naturales, Facultad de Quimica, Universidad de la Habana, Zapata y G. C. Habana, 10 400, Cuba  
 SO Synthetic Communications (1998), 28(10), 1779-1784  
 CODEN: SYNCVA; ISSN: 0039-7911  
 PB Marlene Dekker, Inc.  
 DT Journal  
 LA English  
 AB The synthesis of a plant growth promoter furostanol which bears the characteristic functionality of castasterone on rings A and B is described.

RX(1) OF 15

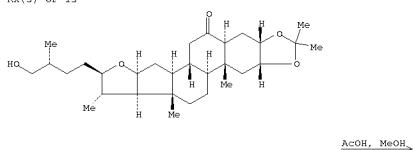


RX(1) OF 15



NOTE: 4 H, OXIDE

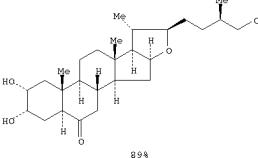
RX(5) OF 15



L6 ANSWER 18 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

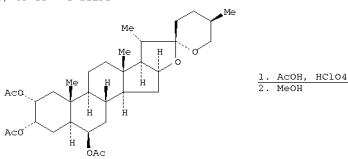
L6 ANSWER 18 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(5) OF 15

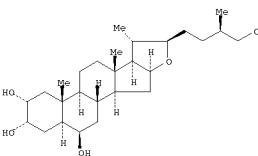


NOTE: 30 MIN, WATER

RX(6) OF 15 - 2 STEPS



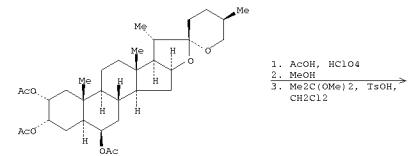
RX(6) OF 15 - 2 STEPS



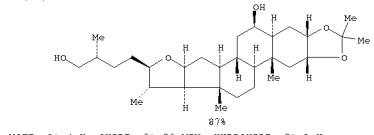
NOTE: 1) 4 H, OXIDE, 2) 30 MIN, HYDROXIDE

16 ANSWER 18 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(10) OF 15 - 3 STEPS

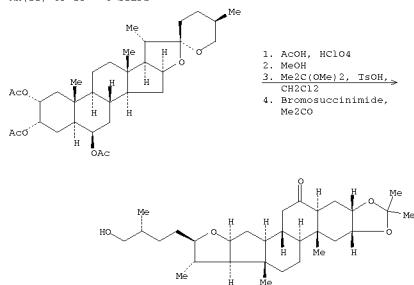


RX(10) OF 15 - 3 STEPS



NOTE: 1) 4 H, OXIDE, 2) 30 MIN, HYDROXIDE, 3) 1 H

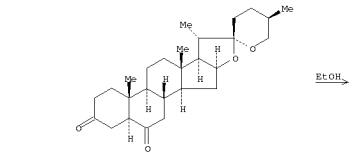
RX(12) OF 15 - 4 STEPS



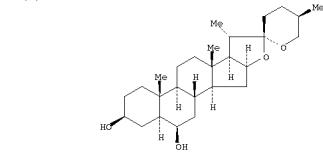
NOTE: 1) 4 H, OXIDE, 2) 30 MIN, HYDROXIDE, 3) 1 H, 4) 45 MIN

16 ANSWER 19 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 129:16282 CASREACT  
 TI Synthesis of (22R)-25R-3B,26-dihydroxy-5a-furostan-6-one  
 AU Arteaga, Martin A.; Iglesias, Gil; Roxana Perez; Lara, Vivian Leliebre; Martinez, Carlos S.; Perez; Manchado, Francisco Coll; Perez, Aristides; Rosales, Rito; Luis Poco  
 CS Laboratorio de Productos Naturales, Facultad de Quimica, Universidad de La Habana, Zapata y G. C., Havana, 10 400, Cuba  
 SO Synthetic Communications (1998), 28(8), 1381-1386  
 COEN: SYNCAV; ISSN: 0039-7911  
 PB Marcel Dekker, Inc.  
 DT Journal  
 LA English  
 AB The synthesis of a plant growth promoter furostanol which bears the characteristic functionality of teasterone on rings A and B is described.

RX(1) OF ?

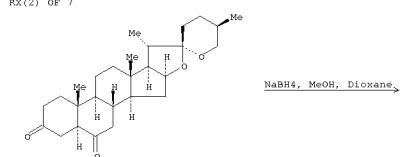


RX(1) OF ?



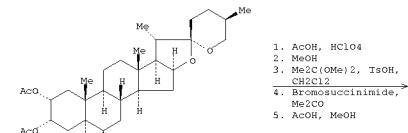
NOTE: 4 H, OXIDE H2

RX(2) OF ?

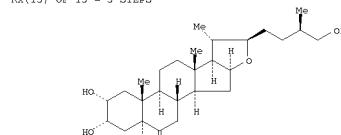


16 ANSWER 19 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(15) OF 15 - 5 STEPS



RX(15) OF 15 - 5 STEPS

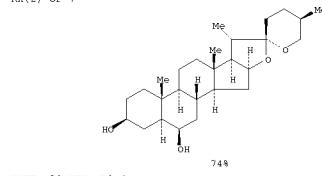


NOTE: 1) 4 H, OXIDE, 2) 30 MIN, HYDROXIDE, 3) 1 H, 4) 45 MIN, 5) 30 MIN, WATER

RE.CNT? THERE ARE ? CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

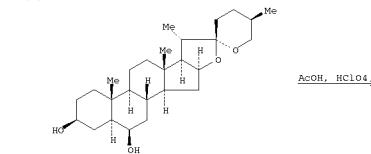
16 ANSWER 19 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(2) OF ?

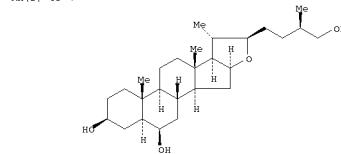


NOTE: 30 MIN, 10.deg.

RX(3) OF ?



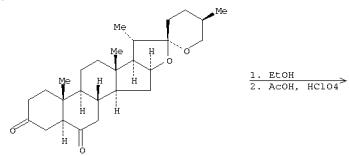
RX(3) OF ?



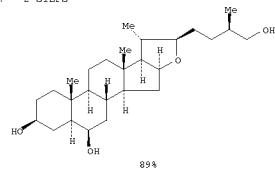
NOTE: 4 H, 10.deg., 1 ATM, OXIDE H2

16 ANSWER 19 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

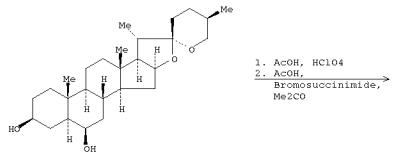
RX(5) OF 7 - 2 STEPS



RX(5) OF 7 - 2 STEPS

NOTE: 1) 4 H, OXIDE H<sub>2</sub>, 2) 4 H, 10.deg., 1 ATM, OXIDE H<sub>2</sub>

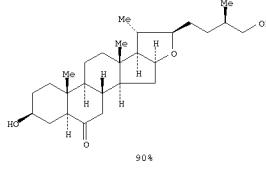
RX(6) OF 7 - 2 STEPS



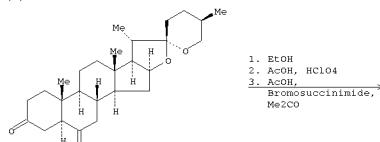
RX(6) OF 7 - 2 STEPS

16 ANSWER 19 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

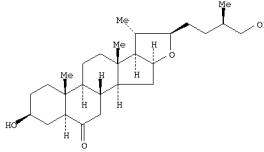
RX(6) OF 7 - 2 STEPS

NOTE: 1) 4 H, 10.deg., 1 ATM, OXIDE H<sub>2</sub>, 2) 45 MIN, 10.deg.

RX(7) OF 7 - 3 STEPS



RX(7) OF 7 - 3 STEPS

NOTE: 1) 4 H, OXIDE H<sub>2</sub>, 2) 4 H, 10.deg., 1 ATM, OXIDE H<sub>2</sub>, 3) 45 MIN, 10.deg.RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

16 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 128:115124 CASREACT

TI Interphylal Product Splicing: The First Total Syntheses of Cephalostatin 1, the North Hemisphere of Ritterazine G, and the Highly Active Hybrid Analogs, Ritterazatin GN1N and GN1S

AU Liao, Thomas G.; Guo, Chuangking; Bhandari, Sudhakar; Fuchs, P. L.; Boyd, Michael R.

CS Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA

SO Journal of the American Chemical Society (1998), 120(4), 692-707

CODEN: JACSCA; ISSN: 0002-7863

PB American Chemical Society

DT Journal

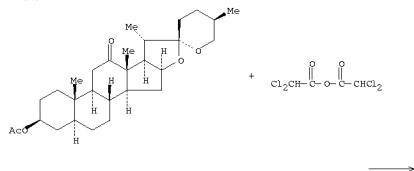
LA English

GI

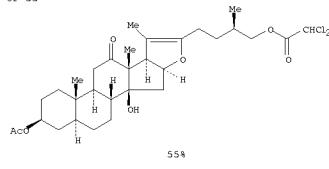
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Convergent total syntheses of the extremely potent cell growth inhibitor cephalostatin 1 and two hybrid analogs, ritterazatin GN1N (I) and GN1S (II), have been achieved. I is highly active in the 60 cell line human tumor panel of the National Cancer Institute. The North hemisphere of ritterazine G was efficiently constructed from hecogenin acetate in 15% yield over 18 steps. Both the key photocoupling/Prins cyclization to intermediates (III) and (IV) proceeded in excellent yield, leading to installation of the A14 moiety in the North G and South 1 steroidal subunits as an application of a method for directed unsym. coupling of the cephalostatin and ritterazine components.

RX(1) OF 55

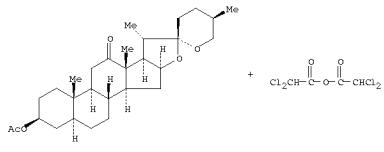


RX(1) OF 55

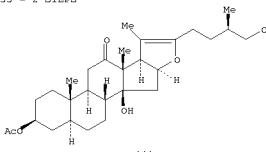


16 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

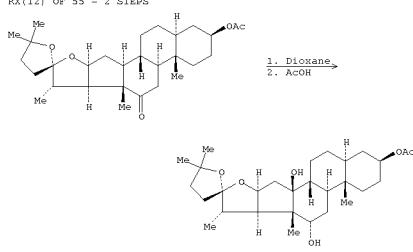
RX(11) OF 55 - 2 STEPS



RX(11) OF 55 - 2 STEPS



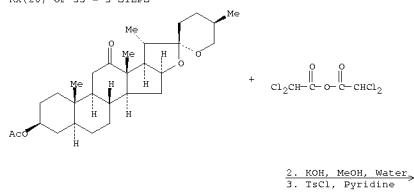
RX(12) OF 55 - 2 STEPS



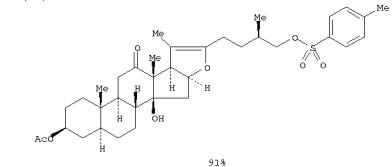
NOTE: 1) photochem.

16 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

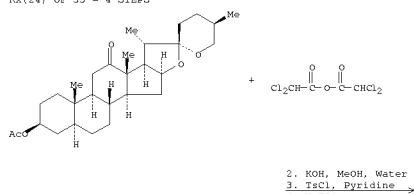
RX(20) OF 55 - 3 STEPS



RX(20) OF 55 - 3 STEPS

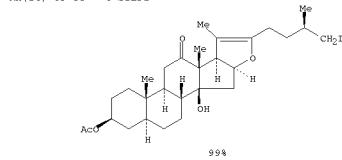


RX(24) OF 55 - 4 STEPS

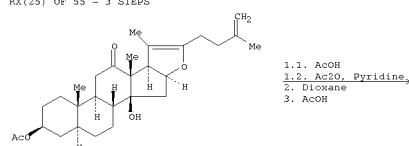


16 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

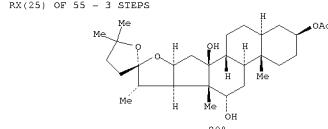
RX(24) OF 55 - 4 STEPS



RX(25) OF 55 - 3 STEPS



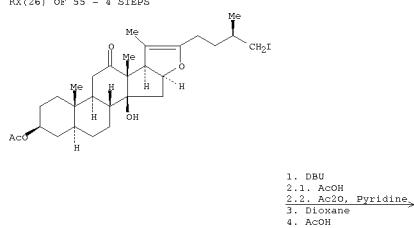
RX(25) OF 55 - 3 STEPS



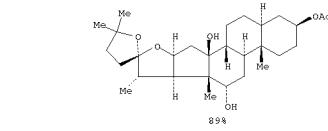
NOTE: 2) photochem.

16 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(26) OF 55 - 4 STEPS



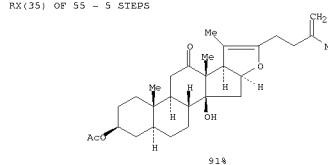
RX(26) OF 55 - 4 STEPS



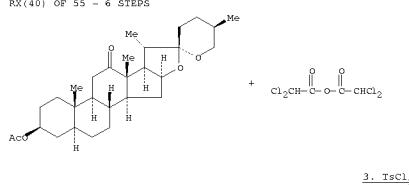
NOTE: 3) photochem.

16 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

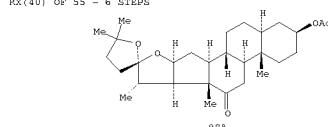
RX(35) OF 55 - 5 STEPS



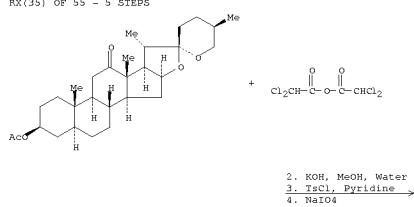
RX(40) OF 55 - 6 STEPS



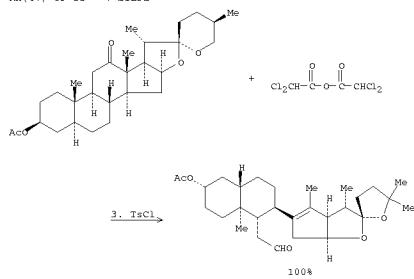
RX(40) OF 55 - 6 STEPS



RX(35) OF 55 - 5 STEPS

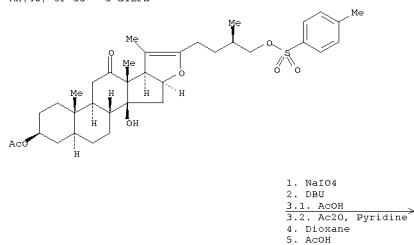


RX(47) OF 55 - 7 STEPS

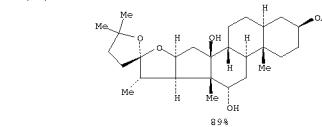


NOTE: 7) photochem.

RX(48) OF 55 - 5 STEPS

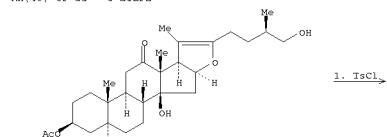


RX(48) OF 55 - 5 STEPS

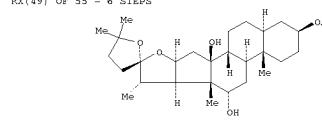


NOTE: 4) photochem.

RX(49) OF 55 - 6 STEPS

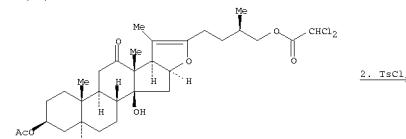


RX(49) OF 55 - 6 STEPS

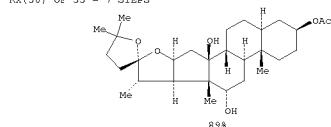


NOTE: 5) photochem.

RX(50) OF 55 - 7 STEPS

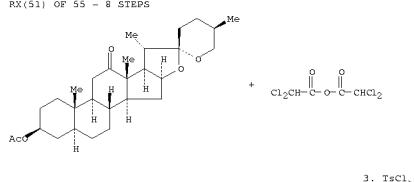


RX(50) OF 55 - 7 STEPS

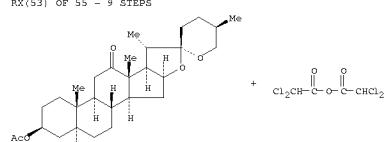


NOTE: 6) photochem.

RX(51) OF 55 - 8 STEPS

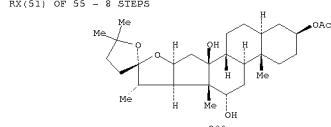


RX(53) OF 55 - 9 STEPS



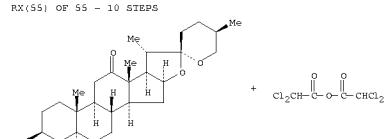
NOTE: 7) photochem.

RX(51) OF 55 - 8 STEPS



NOTE: 7) photochem.

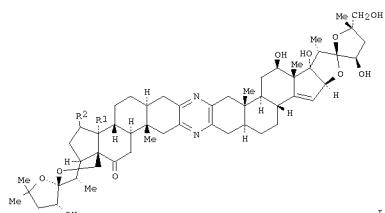
RX(55) OF 55 - 10 STEPS



NOTE: 7) photochem.

L6 ANSWER 20 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)  
 RE.CNT 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

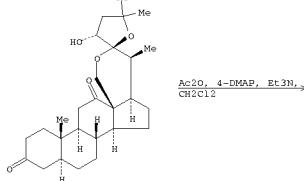
L6 ANSWER 21 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 126:8365 CASREACT  
 TI An Efficient Protocol for the Synthesis of Unsymmetrical Pyrazines. Total  
 Synthesis of (-)-Baclofene.  
 AU Chatterjee, Binay; Sudhaker, Fuchs, P. L.; Boyd, Michael R.  
 CS Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA  
 SO Journal of the American Chemical Society (1996), 118(43), 10672-10673  
 CODEN JACSCA; ISSN: 0002-7863  
 PB American Chemical Society  
 DT Journal  
 LA English  
 GI



AB Reaction of a 1:1 mixture of an  $\alpha$ -aminomethoxime and an  $\alpha$ -azidoketone together with either polyvinylpyridine or Nafion-H in the presence of 1 mol % dibutyltinchloride in benzene at reflux affords unsymmetrical pyrazines in 40-60% yield. This new protocol provides substantially higher yields of unsymmetrical pyrazines than the Heathcock-Smith pyrazine synthesis. The present communication details the application of our method to the synthesis of a C14'-15' dihydro analog I ( $R_1 = R_2 = H$ ) of the exceptionally potent trisubstituted pyrazine anticancer agent Cytarabine (I, 1-RNA bond). The IC<sub>50</sub> of compound I ( $R_1 = R_2 = H$ ) at the National Cancer Institute revealed that the differential cytotoxicity profile and potency of I ( $R_1 = R_2 = H$ ) closely approximated those of the natural reference compound I ( $R_1R_2 = \text{bond}$ ).

RX(4) OF 39 - REACTION DIAGRAM NOT AVAILABLE

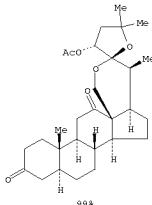
RX(5) OF 39



L6 ANSWER 21 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

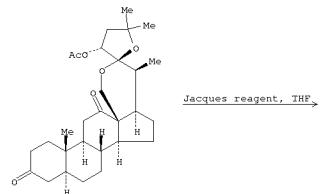
L6 ANSWER 21 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(5) OF 39



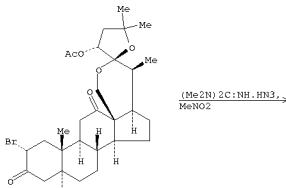
NOTE: stereoselective

RX(6) OF 39

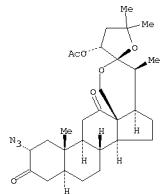


Jacques reagent, THF

RX(7) OF 39

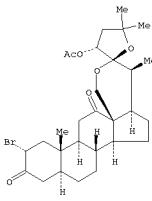


RX(7) OF 39



NOTE: stereoselective

RX(6) OF 39

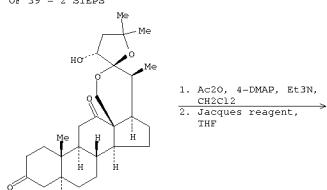


NOTE: stereoselective

RX(10) OF 39 - REACTION DIAGRAM NOT AVAILABLE

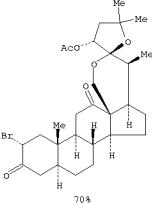
RX(12) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(13) OF 39 - 2 STEPS



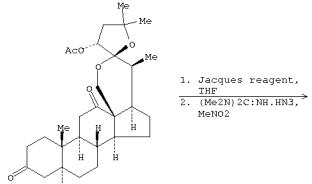
L6 ANSWER 21 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(13) OF 39 - 2 STEPS

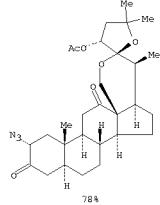


NOTE: 1) stereoselective, 2) stereoselective

RX(14) OF 39 - 2 STEPS



RX(14) OF 39 - 2 STEPS



NOTE: 1) stereoselective, 2) stereoselective

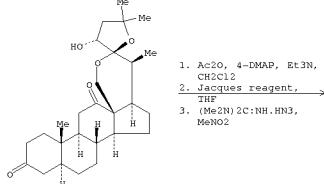
L6 ANSWER 21 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(15) OF 39 - REACTION DIAGRAM NOT AVAILABLE

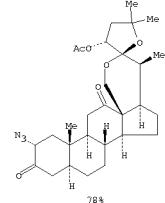
RX(17) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(18) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(19) OF 39 - 3 STEPS



RX(19) OF 39 - 3 STEPS



NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective

RX(20) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(21) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(22) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(23) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(24) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(25) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(26) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(27) OF 39 - REACTION DIAGRAM NOT AVAILABLE

L6 ANSWER 21 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(28) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(29) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(30) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(31) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(32) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(33) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(34) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(35) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(36) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(37) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(38) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RX(39) OF 39 - REACTION DIAGRAM NOT AVAILABLE

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 124:30119 CASREACT

TI Cephalostatin chemistry. 8. Synthesis of a C14,15' dihydro derivative of the south hexacyclic steroid unit of cephalostatin 1. Part II. Spiroketal synths and stereochemical assignment by NMR spectroscopy

AU Bhattacharya, Sudhakar / Bhattacharyya, P. L.

CS Dep. Chem., Purdue Univ., West Lafayette, IN, 47907, USA

SO Tetrahedron Letters (1995), 36(46), 8351-4

CODEN: TELEAY; ISSN: 0040-4039

PB Elsevier

DT Journal

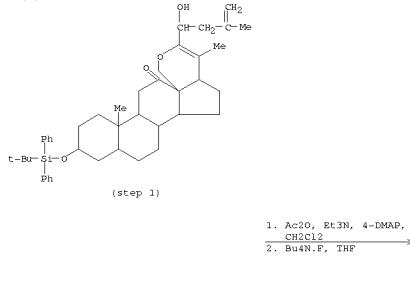
LA English

GI

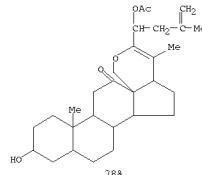
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Transformation of aldehyde I into II, a C14',15' dihydro analog of the "South" hexacyclic spiroketal of cephalostatin 1 is described. The stereochemistry of II was elucidated by NMR spectroscopy.

RX(1) OF 46

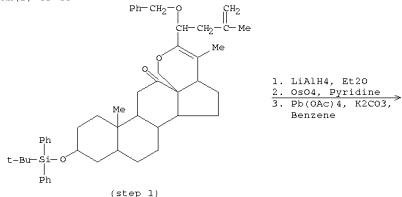


RX(1) OF 46

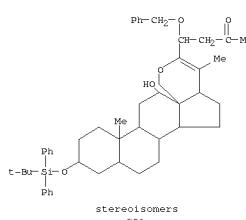


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

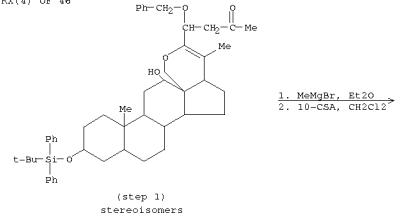
RX(3) OF 46



RX(3) OF 46

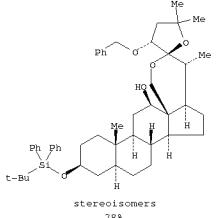


RX(4) OF 46

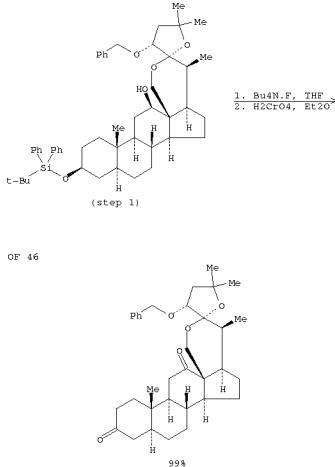


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(4) OF 46

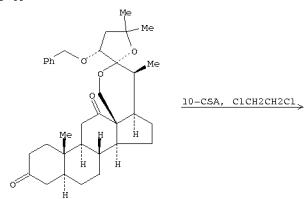


RX(5) OF 46

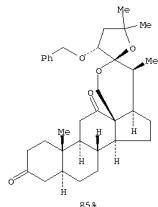


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

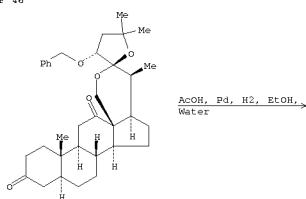
RX(6) OF 46



RX(6) OF 46

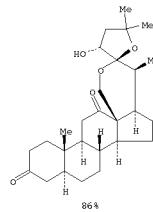


RX(7) OF 46

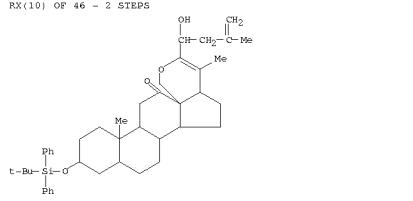


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

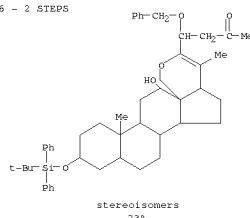
RX(7) OF 46

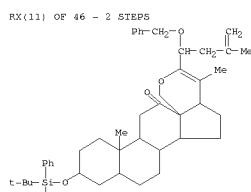


RX(10) OF 46 - 2 STEPS

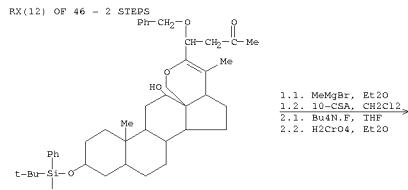
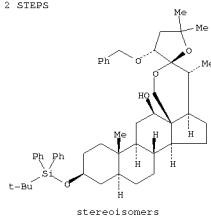


RX(10) OF 46 - 2 STEPS

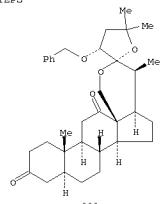




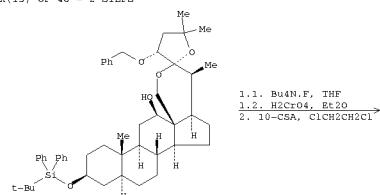
RX(11) OF 46 - 2 STEPS



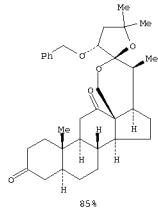
RX(12) OF 46 - 2 STEPS



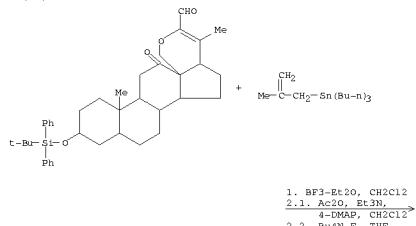
RX(13) OF 46 - 2 STEPS



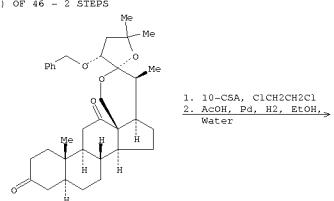
RX(13) OF 46 - 2 STEPS



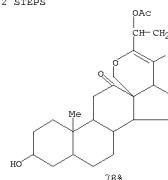
RX(15) OF 46 - 2 STEPS



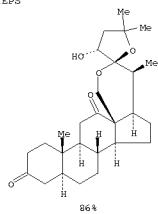
RX(14) OF 46 - 2 STEPS



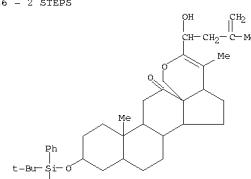
RX(15) OF 46 - 2 STEPS



RX(14) OF 46 - 2 STEPS

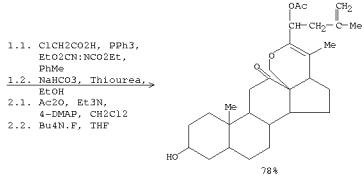


RX(17) OF 46 - 2 STEPS

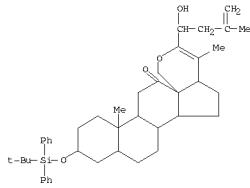


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

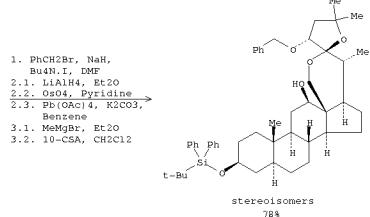
RX(17) OF 46 - 2 STEPS



RX(20) OF 46 - 3 STEPS

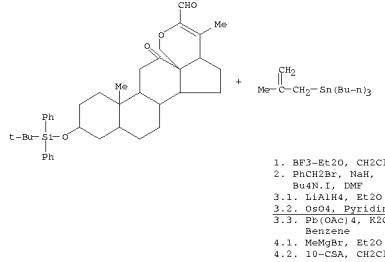


RX(20) OF 46 - 3 STEPS

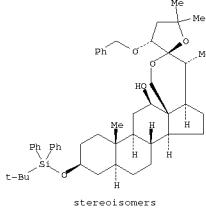


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(21) OF 46 - 4 STEPS

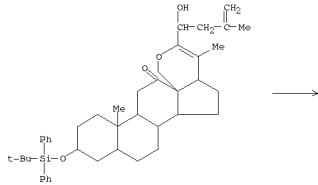


RX(21) OF 46 - 4 STEPS

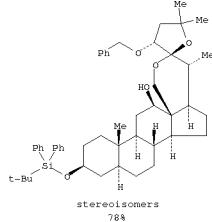


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(22) OF 46 - 4 STEPS

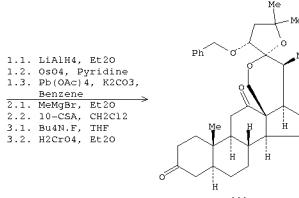


RX(22) OF 46 - 4 STEPS

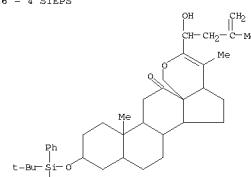


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

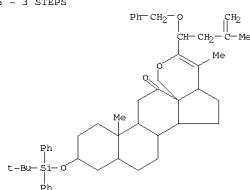
RX(23) OF 46 - 3 STEPS



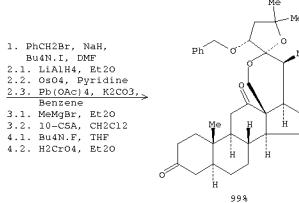
RX(24) OF 46 - 4 STEPS



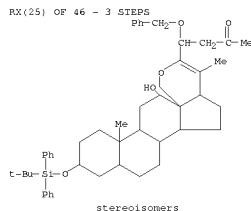
RX(23) OF 46 - 3 STEPS



RX(24) OF 46 - 4 STEPS

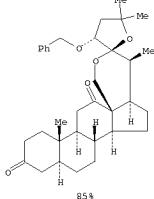


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)



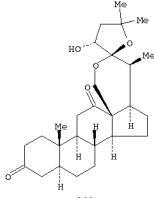
1. 1.  $\text{MeMgBr}$ ,  $\text{Et}_2\text{O}$   
1.2. 10-CSA,  $\text{CH}_2\text{Cl}_2$   
2.1.  $\text{Bu}_4\text{N.F}$ ,  $\text{THF}$   
2.2.  $\text{H}_2\text{CrO}_4$ ,  $\text{Et}_2\text{O}$   
3. 10-CSA,  $\text{ClCH}_2\text{CH}_2\text{Cl}$

RX(25) OF 46 - 3 STEPS

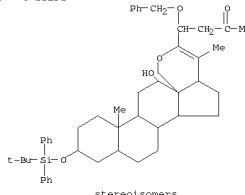


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

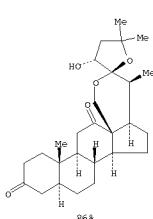
RX(27) OF 46 - 3 STEPS



RX(28) OF 46 - 4 STEPS



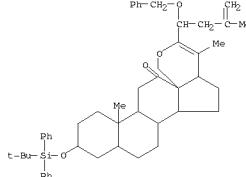
1. 1.  $\text{MeMgBr}$ ,  $\text{Et}_2\text{O}$   
1.2. 10-CSA,  $\text{CH}_2\text{Cl}_2$   
2.1.  $\text{Bu}_4\text{N.F}$ ,  $\text{THF}$   
2.2.  $\text{H}_2\text{CrO}_4$ ,  $\text{Et}_2\text{O}$   
3. 10-CSA,  $\text{ClCH}_2\text{CH}_2\text{Cl}$   
4.  $\text{AcOH}$ ,  $\text{Pd}$ ,  $\text{H}_2$ ,  $\text{EtOH}$ , Water



RX(28) OF 46 - 4 STEPS

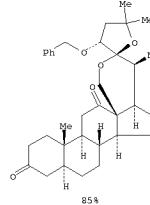
16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(26) OF 46 - 4 STEPS

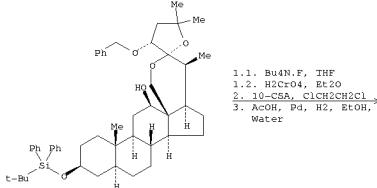


RX(26) OF 46 - 4 STEPS

1.1.  $\text{LiAlH}_4$ ,  $\text{Et}_2\text{O}$   
1.2.  $\text{OsO}_4$ , Pyridine  
1.3.  $\text{Pb}(\text{OAc})_4$ ,  $\text{K}_2\text{CO}_3$ , Benzene  
2.1.  $\text{Bu}_4\text{N.F}$ ,  $\text{Et}_2\text{O}$   
2.2.  $\text{H}_2\text{CrO}_4$ ,  $\text{Et}_2\text{O}$   
3.1.  $\text{Bu}_4\text{N.F}$ ,  $\text{THF}$   
3.2.  $\text{H}_2\text{CrO}_4$ ,  $\text{Et}_2\text{O}$   
4. 10-CSA,  $\text{ClCH}_2\text{CH}_2\text{Cl}$

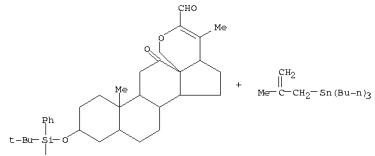


RX(27) OF 46 - 3 STEPS



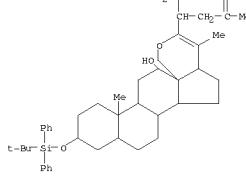
16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(29) OF 46 - 3 STEPS

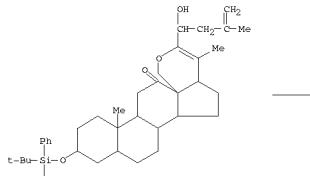


1.  $\text{BF}_3\text{-Et}_2\text{O}$ ,  $\text{CH}_2\text{Cl}_2$   
2.  $\text{PhCH}_2\text{Br}$ ,  $\text{NaH}$ ,  $\text{Bu}_4\text{N.I}$ , DMF  
3.1.  $\text{LiAlH}_4$ ,  $\text{Et}_2\text{O}$   
3.2.  $\text{OsO}_4$ , Pyridine  
3.3.  $\text{Pb}(\text{OAc})_4$ ,  $\text{K}_2\text{CO}_3$ , Benzene

RX(29) OF 46 - 3 STEPS

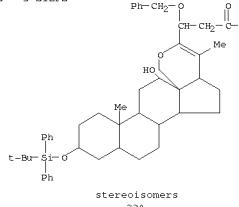


RX(30) OF 46 - 3 STEPS

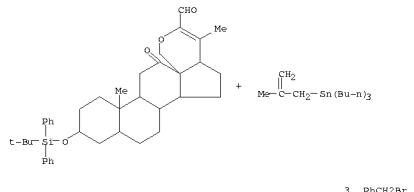


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

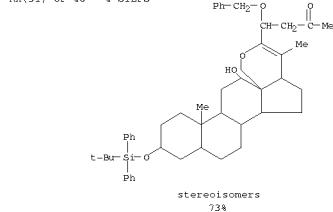
RX(30) OF 46 - 3 STEPS



RX(31) OF 46 - 4 STEPS

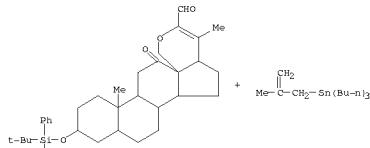


RX(31) OF 46 - 4 STEPS

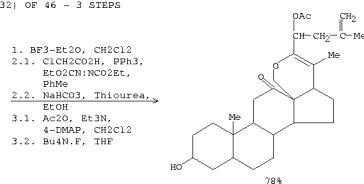


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

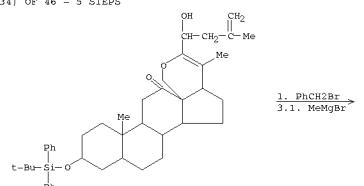
RX(32) OF 46 - 3 STEPS



RX(32) OF 46 - 3 STEPS

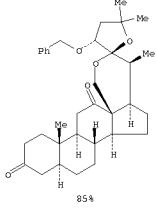


RX(34) OF 46 - 5 STEPS



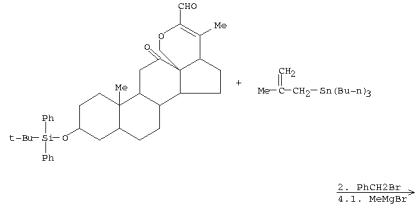
16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(34) OF 46 - 5 STEPS

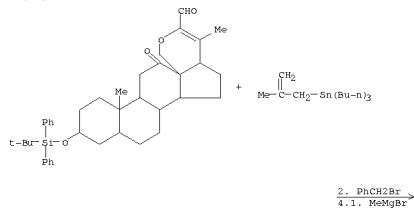


16 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

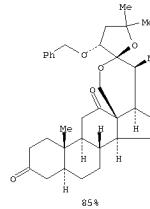
RX(36) OF 46 - 6 STEPS



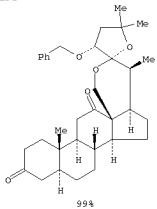
RX(35) OF 46 - 5 STEPS



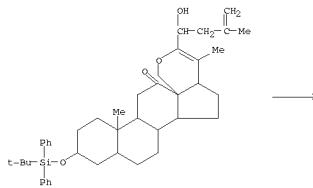
RX(36) OF 46 - 6 STEPS



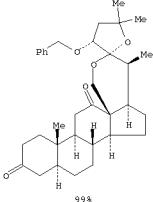
RX(35) OF 46 - 5 STEPS



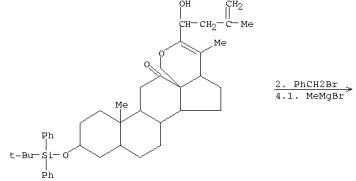
RX(37) OF 46 - 5 STEPS



RX(37) OF 46 - 5 STEPS

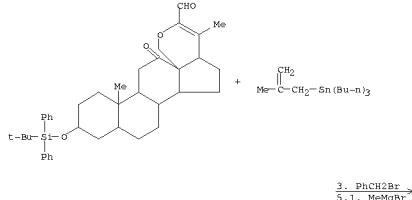


RX(38) OF 46 - 6 STEPS

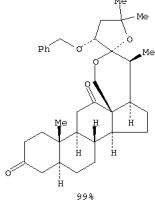


RX(39) OF 46 - 6 STEPS

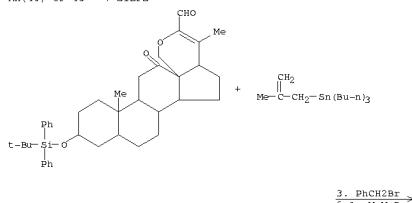
RX(39) OF 46 - 6 STEPS



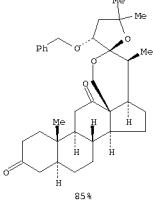
RX(39) OF 46 - 6 STEPS



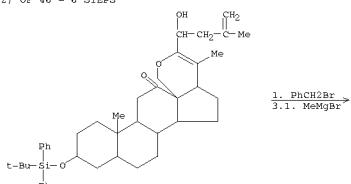
RX(40) OF 46 - 7 STEPS



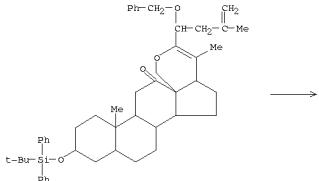
RX(40) OF 46 - 7 STEPS



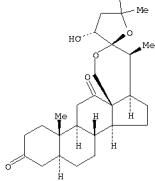
RX(42) OF 46 - 6 STEPS



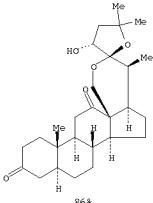
RX(41) OF 46 - 5 STEPS



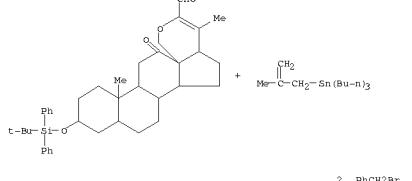
RX(42) OF 46 - 6 STEPS



RX(41) OF 46 - 5 STEPS

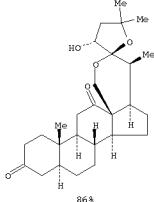


RX(43) OF 46 - 7 STEPS

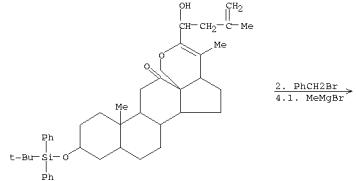


L6 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

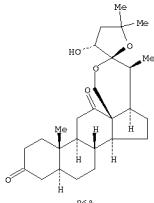
RX(43) OF 46 - 7 STEPS



RX(44) OF 46 - 7 STEPS

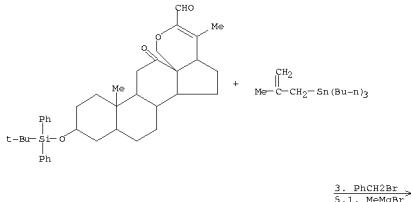


RX(44) OF 46 - 7 STEPS

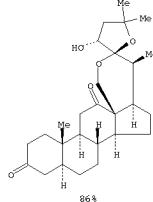


L6 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

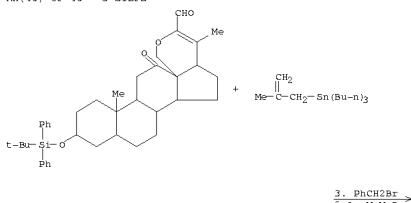
RX(45) OF 46 - 8 STEPS



RX(45) OF 46 - 8 STEPS

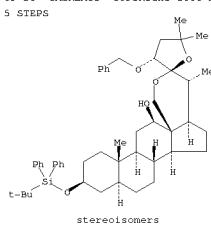


RX(46) OF 46 - 5 STEPS



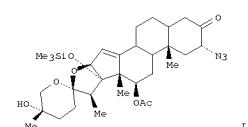
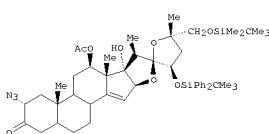
L6 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(46) OF 46 - 5 STEPS



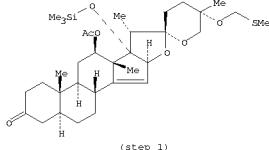
L6 ANSWER 22 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 123340544 CASREACT  
 TI Biomimetic Total Syntheses of (+)-Cephalostatin 7, (+)-Cephalostatin 12, and (+)-Ritterazine K  
 AU Jeon, Jae Uk; Sutton, Scott C.; Kim, Seongkon; Fuchs, P. L.  
 CS Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA  
 SO Journal of the American Chemical Society (1995), 117(40), 10157-8  
 CODEN: JACSAU; ISSN: 0002-7863  
 PB American Chemical Society  
 DT Journal  
 LA English  
 GI



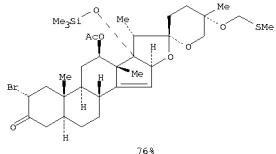
AB Reaction of a 1:1 mixture of  $\alpha$ -azido ketones I and II with sodium hydrogen tellurite produces a mixture of three tricyclic pyrazines after cleavage of the protective groups. Two of these materials are identical to natural cephalostatin 12 and cephalostatin 7 and the third product is shown to have the structure of ritterazine K.

RX(2) OF 71

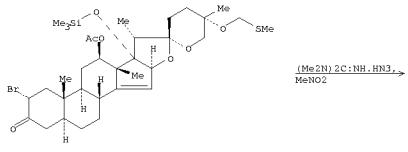


1. Jacques reagent,  
 THF  
 2. NaHSO3

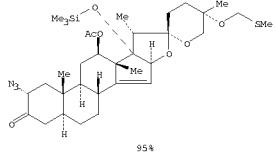
RX(2) OF 71



RX(4) OF 71



RX(4) OF 71



NOTE: chemoselective, alternative reaction conditions/solvent gave lower yield

RX(8) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(26) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(27) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(28) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(29) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(30) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(31) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(32) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(33) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(34) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(35) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(36) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(37) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(38) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(39) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(40) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(41) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(42) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(43) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(44) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(45) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(46) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(47) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(48) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(49) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(50) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(51) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(52) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(53) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(54) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(55) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(56) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(57) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(58) OF 71 - REACTION DIAGRAM NOT AVAILABLE

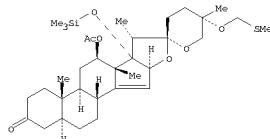
RX(59) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(60) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(61) OF 71 - REACTION DIAGRAM NOT AVAILABLE

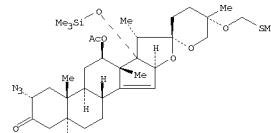
RX(62) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(12) OF 71 - 2 STEPS



1.1. Jacques reagent,  
THF  
1.2. NaHSO3  
2. (Me2N)2C:NH.HN3,  
MeNO2

RX(12) OF 71 - 2 STEPS



NOTE: 2) chemoselective, alternative reaction conditions/solvent gave lower yield

RX(13) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(14) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(15) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(16) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(17) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(18) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(19) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(20) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(21) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(22) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(23) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(24) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(25) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(63) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(64) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(65) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(66) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(67) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(68) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(69) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(70) OF 71 - REACTION DIAGRAM NOT AVAILABLE

RX(71) OF 71 - REACTION DIAGRAM NOT AVAILABLE

L6 ANSWER 24 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 122:265778 CASREACT  
 II Preparation of cephalostatin analogs as neoplasm inhibitors.  
 IN Winterfeld, Ekkehard; Kramer, Andreas; Ullmann, Ulrike; Laurent, Henry  
 DA Schleiden, -G., Germany  
 SG Ger. Offen. 13 pp.  
 CODEN: GMXXBX  
 DT Patent  
 LA German  
 FAN, CII

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE-4318924	A1	19941208	1993DE-004318924	19930603
CA-2164314	A1	19941222	1994CA-002164314	19940603
WO-9509310	A1	19941222	1994WO-EP0001858	19940603
WO CA JP US				
EP-701559	A1	19960320	1994EP-000919619	19940603
EP-701559	B1	19980729		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP-0611256		19961216	1994JP-000512110	19940603
AT-169021	T	19980815	1994AT-000919619	19940603
US-5708164	A	19980113	1996US-000564234	19960606
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OS MARPAT 122:265778				
GI				

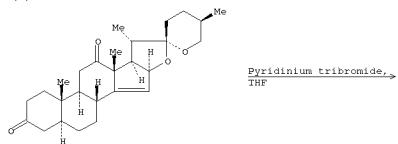
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. [I]: (a) R1, R11 = alkanoyl; R2R3, R12R13 = bond; or (b)  
 R11 = alkanoyl; R2R3 = bond; R12 = O; R3 = H or (c) R3 =  $\beta$ -OH;  
 R2 = H, R12R13 = bond; R3 = H or (d) R11 = R12, R12 = R13.  
 R13 = H) were prepared. Thus, dione (II) X = H) was stirred with pyridinium  
 bromide perrbomide in THF to give 80% II (X = HN<sup>+</sup>). This was stirred with NaN<sub>3</sub>  
 and catalytic KI in DMF at 50° to give 80% II (X = HN<sup>-</sup>). The  
 latter was stirred with PCl<sub>5</sub> in Et<sub>2</sub>OAc/MeOH/HOAc under N<sub>2</sub> to give 64% I  
 (R11 = R12, R3 = H). I was then reacted with LiAlH<sub>4</sub>(SiMe<sub>3</sub>)<sub>2</sub>  
 and then pivaloyl chloride to give 40% I (R11 = O; R3 = H; R12 =  
 pivaloyloxy; R12R13 = bond). I are highly effective in inhibiting cell  
 growth in various human cell lines.

RX(2) OF 29 - REACTION DIAGRAM NOT AVAILABLE

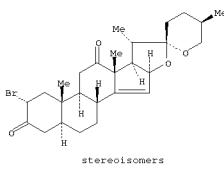
RX(3) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(4) OF 29



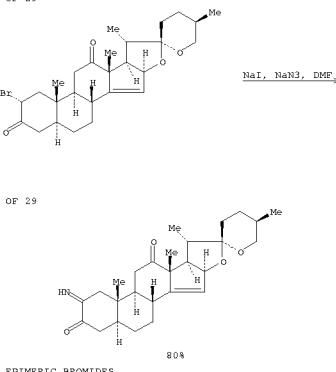
L6 ANSWER 24 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(4) OF 29



NOTE: 19% ALPHA/BETA MIXT.

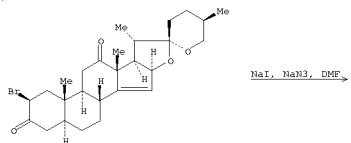
RX(5) OF 29



NOTE: EPIMERIC BROMIDES

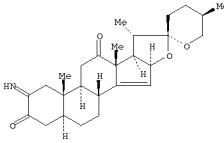
L6 ANSWER 24 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(6) OF 29



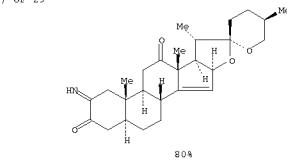
L6 ANSWER 24 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(9) OF 29 - 2 STEPS



NOTE: 1) 19% ALPHA/BETA MIXT., 2) EPIMERIC BROMIDES

RX(6) OF 29

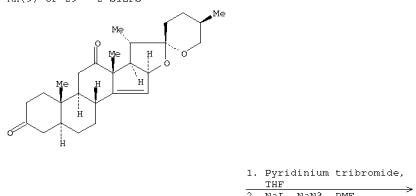


NOTE: EPIMERIC BROMIDES

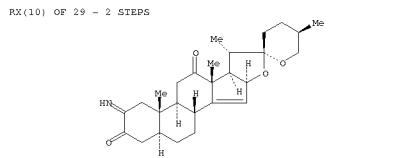
RX(7) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(8) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(9) OF 29 - 2 STEPS



RX(10) OF 29 - 2 STEPS



NOTE: 1) 19% ALPHA/BETA MIXT., 2) EPIMERIC BROMIDES

RX(11) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(12) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(13) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(14) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(15) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(16) OF 29 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 24 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(17) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(18) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(19) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(20) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(21) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(22) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(23) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(24) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(25) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(26) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(27) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(28) OF 29 - REACTION DIAGRAM NOT AVAILABLE

RX(29) OF 29 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 122:81737 CASREACT

TI Synthesis and Biological Activity Of Unsymmetrical Bis-Steroidal Pyrazines Related to the Cytotoxic Marine Natural Product Cephalostatin 1

AU Northcock, Clayton H.; Smith, Stephen C.

CS Department of Chemistry, University of California, Berkeley, CA, 94720, USA

SO Journal of Organic Chemistry (1994), 59(22), 6828-39

DT Journal

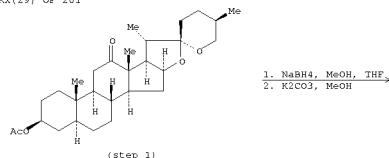
LA English

GI

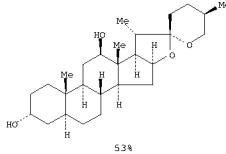
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A mild, high-yielding synthesis of sym. steroidyl pyrazines was achieved from the dimerization of 4-amino-1-acetoxy steroids, which were produced in situ from the triphenylphosphine-water reduction of the corresponding  $\alpha$ -azido ketone. 2-Azidocholestan-3-one I gave dimeric steroidyl pyrazine II very cleanly, and two known dimeric pyrazines based on androstanone were also made using this methodol. Both C2-sym. geometric isomers of this dimeric steroidyl pyrazine derived from cholestanone were prepared. The reaction of 2,3-diaminosteroids with 2,3-diketones. A route to unsym. bis-steroidal pyrazines was based on the observation that  $\alpha$ -acetoxy ketones react with  $\alpha$ -amino oximes directly with no need for oxidation of intermediate dihydropyrazines. Heating 2,3-diaminosteroid III, derived from cholestanone, with 2-amino-3-methoxycholestanone IV in toluene at 145° gave the corresponding unsym. pyrazine V in moderate yield. Five of the steroidyl pyrazines were evaluated in the National Cancer Institute's new *in vitro*, disease-oriented antitumor screen, but none showed sufficient activity to warrant *in vivo* investigation.

RX(29) OF 201

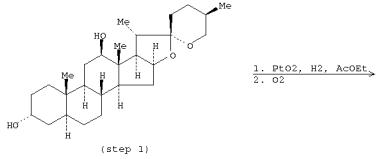


RX(29) OF 201

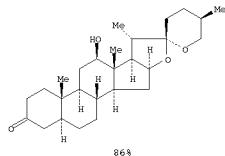


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

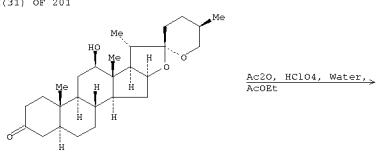
RX(30) OF 201



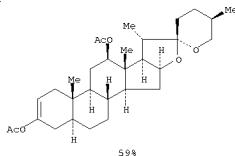
RX(30) OF 201



RX(31) OF 201

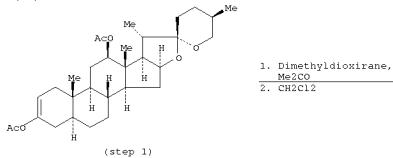


RX(31) OF 201

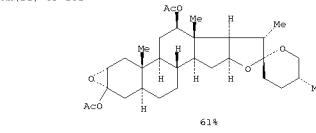


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

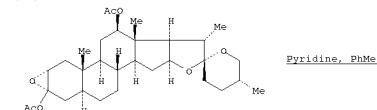
RX(32) OF 201



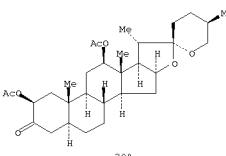
RX(32) OF 201



RX(33) OF 201

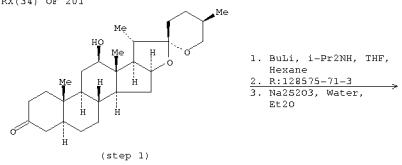


RX(33) OF 201



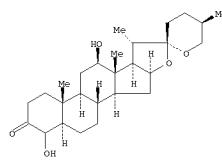
16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(34) OF 201

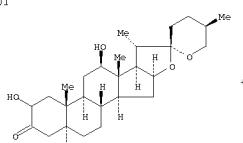


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

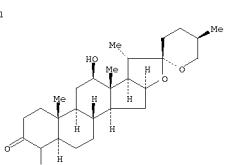
RX(34) OF 201



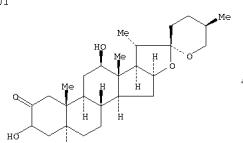
RX(34) OF 201



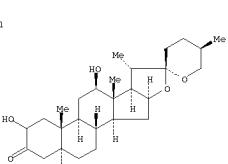
RX(35) OF 201



RX(34) OF 201

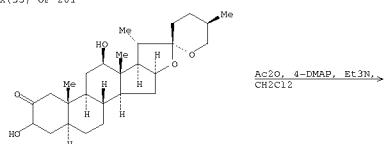


RX(35) OF 201



16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(35) OF 201

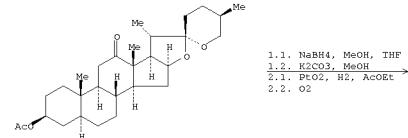


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

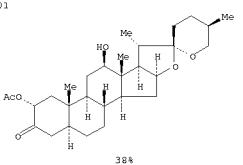
RX(36) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(60) OF 201 - REACTION DIAGRAM NOT AVAILABLE

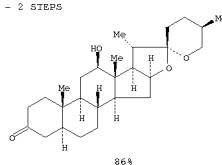
RX(67) OF 201 - 2 STEPS



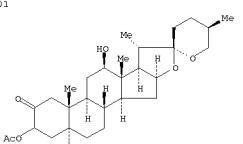
RX(35) OF 201



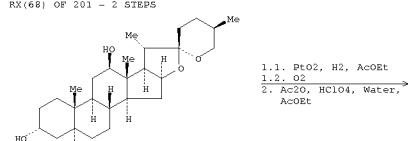
RX(67) OF 201 - 2 STEPS



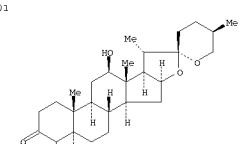
RX(35) OF 201



RX(68) OF 201 - 2 STEPS



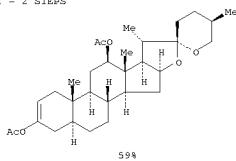
RX(35) OF 201



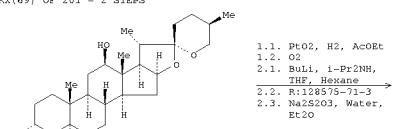
NOTE: 96% OVERALL

16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

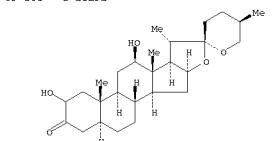
RX(68) OF 201 - 2 STEPS



RX(69) OF 201 - 2 STEPS

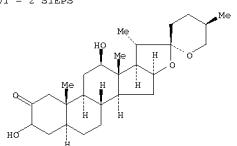


RX(69) OF 201 - 2 STEPS

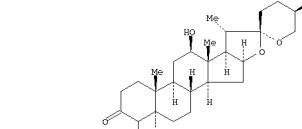


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

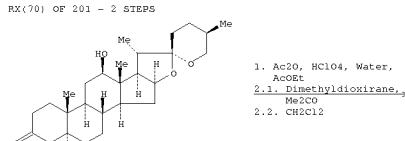
RX(69) OF 201 - 2 STEPS



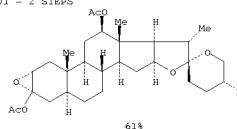
RX(69) OF 201 - 2 STEPS



RX(70) OF 201 - 2 STEPS

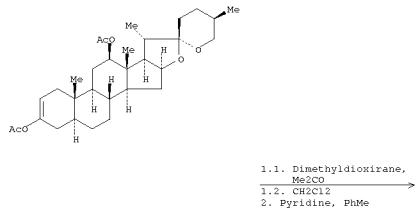


RX(70) OF 201 - 2 STEPS

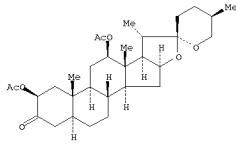


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

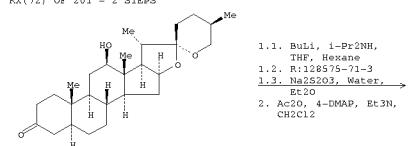
RX(71) OF 201 - 2 STEPS



RX(71) OF 201 - 2 STEPS

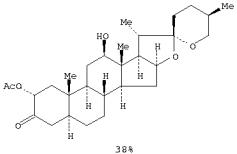


RX(72) OF 201 - 2 STEPS

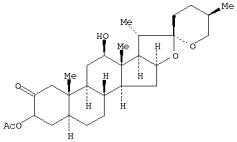


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

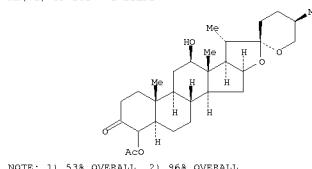
RX(72) OF 201 - 2 STEPS



RX(72) OF 201 - 2 STEPS



RX(72) OF 201 - 2 STEPS



RX(73) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(74) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(62) OF 201 - REACTION DIAGRAM NOT AVAILABLE

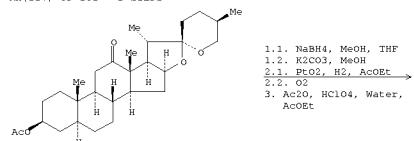
RX(112) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(113) OF 201 - REACTION DIAGRAM NOT AVAILABLE

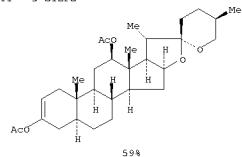
RX(119) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(120) OF 201 - REACTION DIAGRAM NOT AVAILABLE

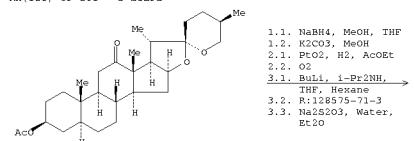
RX(127) OF 201 - 3 STEPS



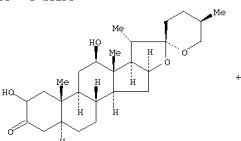
RX(127) OF 201 - 3 STEPS



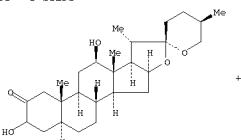
RX(128) OF 201 - 3 STEPS



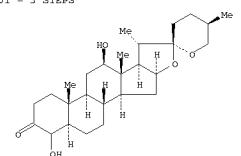
RX(128) OF 201 - 3 STEPS



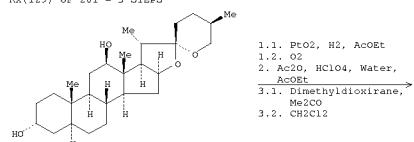
RX(128) OF 201 - 3 STEPS



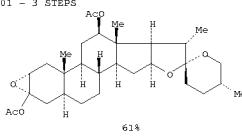
RX(128) OF 201 - 3 STEPS



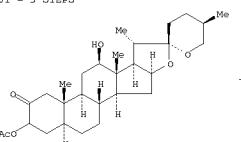
RX(129) OF 201 - 3 STEPS



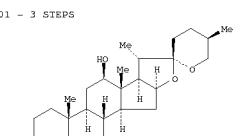
RX(129) OF 201 - 3 STEPS



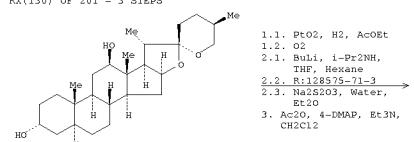
RX(130) OF 201 - 3 STEPS



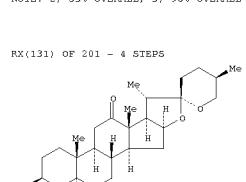
RX(130) OF 201 - 3 STEPS



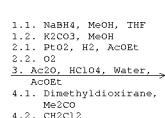
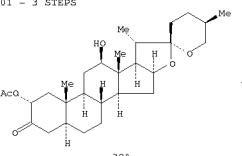
RX(130) OF 201 - 3 STEPS



RX(130) OF 201 - 3 STEPS

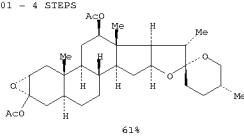


RX(130) OF 201 - 3 STEPS

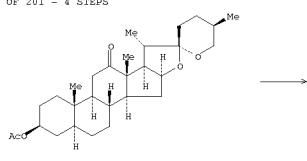


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

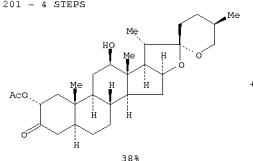
RX(131) OF 201 - 4 STEPS



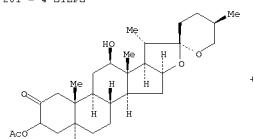
RX(132) OF 201 - 4 STEPS



RX(132) OF 201 - 4 STEPS

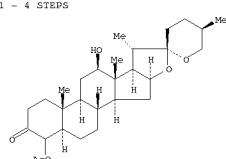


RX(132) OF 201 - 4 STEPS



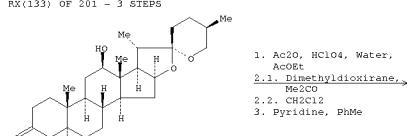
16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(132) OF 201 - 4 STEPS

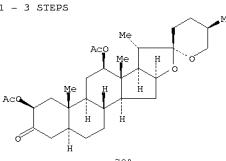


NOTE: 3) 53% OVERALL, 4) 96% OVERALL

RX(133) OF 201 - 3 STEPS

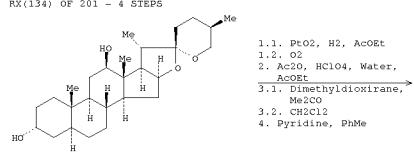


RX(133) OF 201 - 3 STEPS

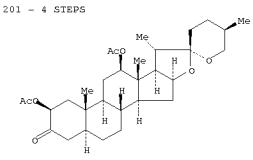


16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(134) OF 201 - 4 STEPS



RX(134) OF 201 - 4 STEPS



RX(135) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(136) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(137) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(138) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(139) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(146) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(181) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(182) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(183) OF 201 - REACTION DIAGRAM NOT AVAILABLE

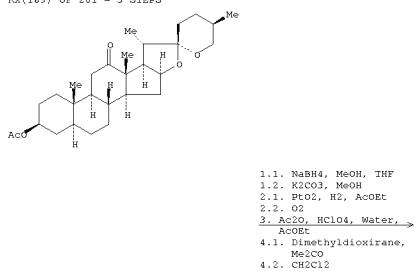
RX(185) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(186) OF 201 - REACTION DIAGRAM NOT AVAILABLE

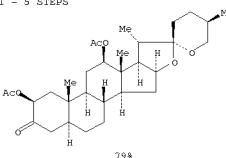
RX(187) OF 201 - REACTION DIAGRAM NOT AVAILABLE

16 ANSWER 25 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(189) OF 201 - 5 STEPS



RX(189) OF 201 - 5 STEPS



RX(190) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(191) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(192) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(193) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(194) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(195) OF 201 - REACTION DIAGRAM NOT AVAILABLE

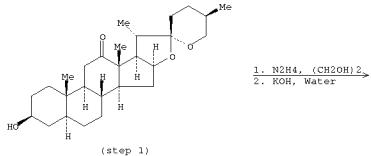
RX(196) OF 201 - REACTION DIAGRAM NOT AVAILABLE

RX(197) OF 201 - REACTION DIAGRAM NOT AVAILABLE

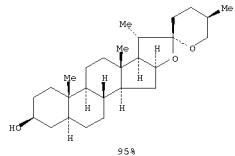
RX(198) OF 201 - REACTION DIAGRAM NOT AVAILABLE

L6 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 121:301142 CASREACT  
 II synthesis of oxymetholone from hecogenin  
 AU Ruiz Garcia, Jose Antonio; Espinosa Espinosa, Jose Manuel; Velez Castro,  
 Herrera Rosada Perez, Ana  
 CS Dep. DE Sint. Lab. Tec. DE Med., Cuba  
 SG Revista Cubana de Farmacia (1992), 26(1), 11-21  
 CODEN: RCUFAC; ISSN: 0034-7515  
 DT Journal  
 LA Spanish  
 AB Oxymetholone was obtained by a 7-step procedure starting from hecogenin.

RX(1) OF 28

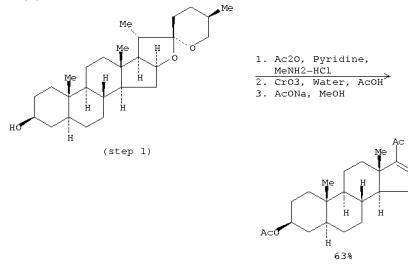


RX(1) OF 28

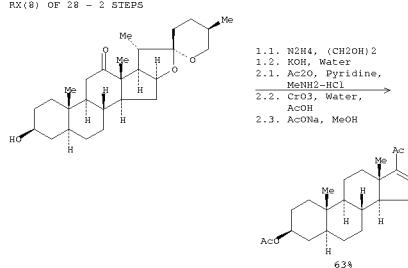


L6 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(2) OF 28

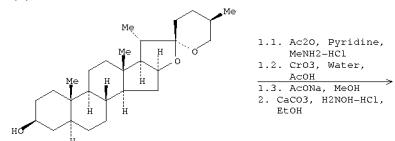


RX(8) OF 28 - 2 STEPS

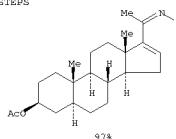


L6 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(9) OF 28 - 2 STEPS

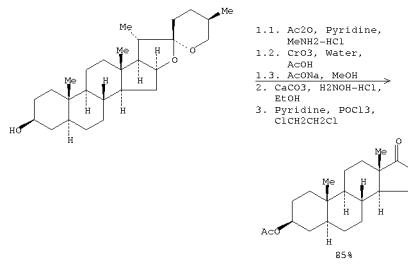


RX(9) OF 28 - 2 STEPS

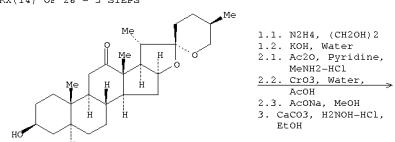


L6 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

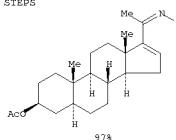
RX(15) OF 28 - 3 STEPS



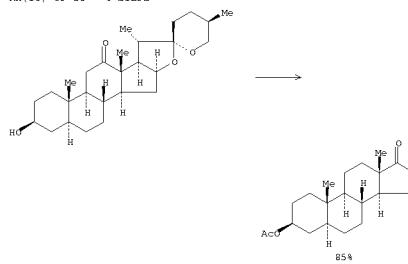
RX(14) OF 28 - 3 STEPS



RX(14) OF 28 - 3 STEPS

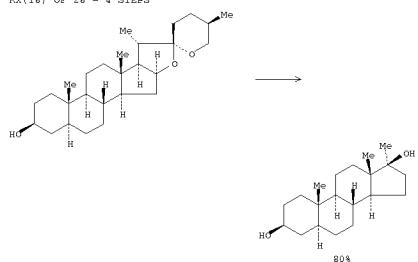


RX(16) OF 28 - 4 STEPS



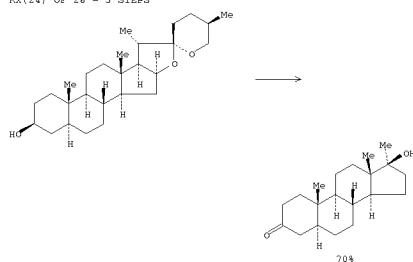
16 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(18) OF 28 - 4 STEPS

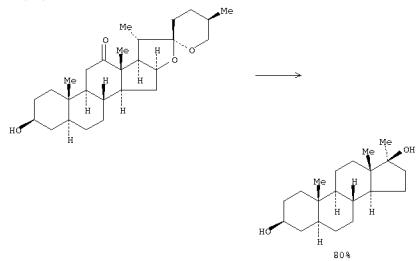


16 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

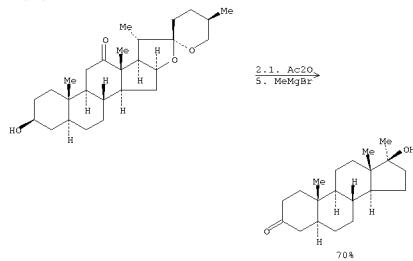
RX(24) OF 28 - 5 STEPS



RX(23) OF 28 - 5 STEPS

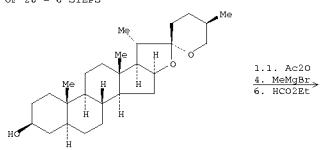


RX(25) OF 28 - 6 STEPS

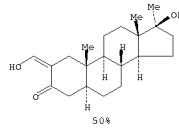


16 ANSWER 26 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

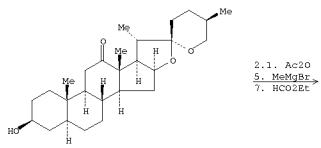
RX(27) OF 28 - 6 STEPS



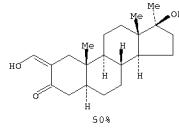
RX(27) OF 28 - 6 STEPS



RX(28) OF 28 - 7 STEPS



RX(28) OF 28 - 7 STEPS



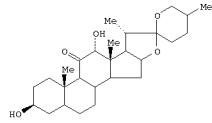
16 ANSWER 27 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 121:9812 CASREACT  
 TI Transposition of the carbonyl group in hecogenin  
 AU Ruiz Garcia, Jose Alberto  
 CS Depto. Sintet. Lab. Tec. Med., Havana, Cuba  
 SO Revista Cubana de Farmacia (1991), 25(2), 100-5  
 CODEN: RCUFAC; ISSN: 0034-7918

DT Journal

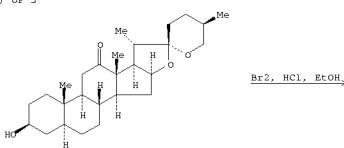
LA Spanish

GI

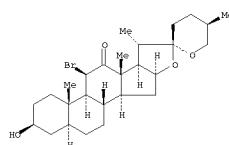


AB Bromination of hecogenin (3 $\beta$ -hydroxyspirostan-11-one) afforded 11 $\beta$ -bromohecogenin, which was hydrolyzed with 10% alc. NaOH solution to give 3 $\beta$ ,12 $\beta$ -dihydroxyspirostan-11-one (I).

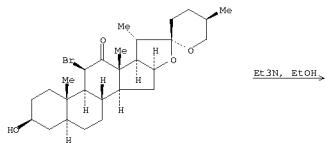
RX(1) OF 3



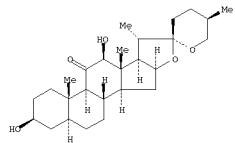
RX(1) OF 3



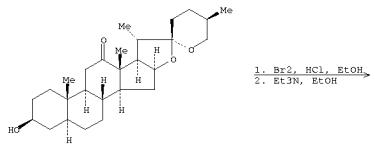
RX(2) OF 3



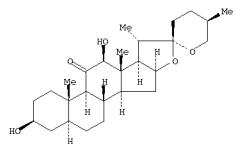
RX(2) OF 3



RX(3) OF 3 - 2 STEPS



RX(3) OF 3 - 2 STEPS

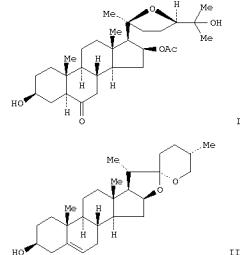
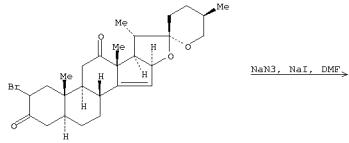


L6 ANSWER 28 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 120:245596 CASREACT  
 TI A short route to cephalostatin analogs  
 AU Kramer, Andreas; Ullmann, Ulrike; Winterfeldt, Ekkehard  
 CS Justus Liebigs Ann. Chem.: Univ. Hannover, Hannover, 39167, Germany  
 SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1999), (23), 2865-7  
 CODEN: JCPRA4; ISSN: 0300-922X  
 DT Journal  
 LA English  
 GI

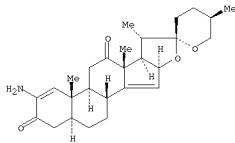
L6 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 120:8811 CASREACT  
 TI Hemisynthesis of (20S,24R)-20,24-epoxy-3 $\beta$ ,16 $\beta$ ,25-trihydroxy-6-oxo-5 $\alpha$ -cholestane-16-acetate from diosgenin  
 AU Tavares, Regina; Pandolfi, Thierry; Braekman, Jean Claude; Daloz, Desire  
 CS Bull. Soc. Chim. Belg. Brussels, Belg., B-1050, Belg.  
 SO Tetrahedron (1993), 49(23), 5079-90  
 CODEN: TETRAB; ISSN: 0040-4020  
 DT Journal  
 LA English  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*  
 AB Starting from hecogenin derivative I, a short route to cephalostatin analog II ( $R = H$ ,  $R_1 = OH$ ) is described. The key step was the cyclic dimerization of enamic ketone III to cephalostatin analog II ( $R, R_1 = O$ ) by hydrogenation.

RX(1) OF 10



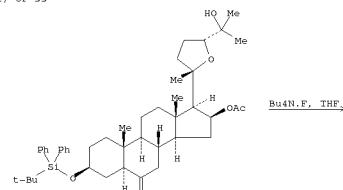
RX(1) OF 10



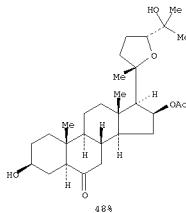
RX(2) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(4) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(5) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(6) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(7) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(8) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(9) OF 10 - REACTION DIAGRAM NOT AVAILABLE  
 RX(10) OF 10 - REACTION DIAGRAM NOT AVAILABLE

AB The title compound (I), which was isolated as its 3 $\beta$ -sophoroside from the defensive secretion of Chrysomela varians (Coleoptera: Chrysomelidae), has been synthesized from diosgenin (III) in 8 steps.

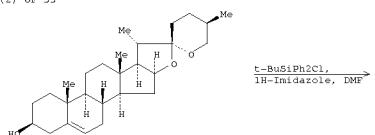
RX(1) OF 33



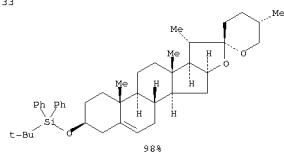
RX(1) OF 33



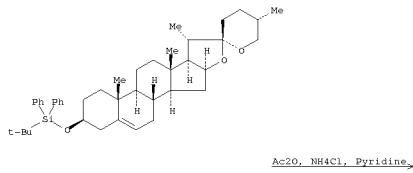
RX(2) OF 33



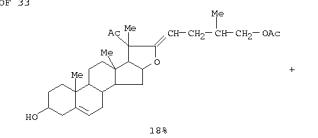
RX(2) OF 33



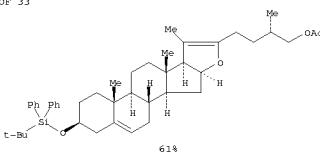
RX(3) OF 33



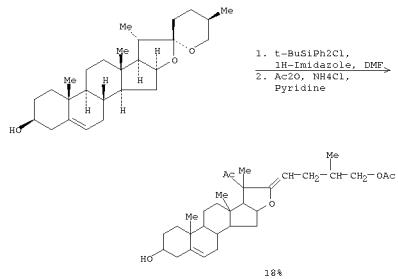
RX(3) OF 33



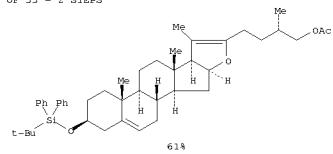
RX(3) OF 33



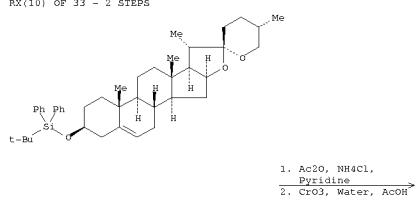
RX(9) OF 33 - 2 STEPS



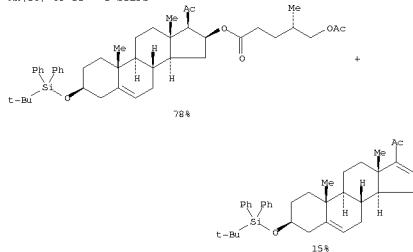
RX(9) OF 33 - 2 STEPS



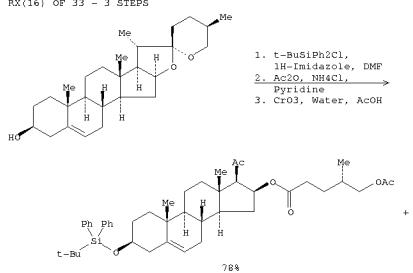
RX(10) OF 33 - 2 STEPS



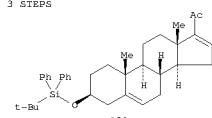
RX(10) OF 33 - 2 STEPS



RX(16) OF 33 - 3 STEPS

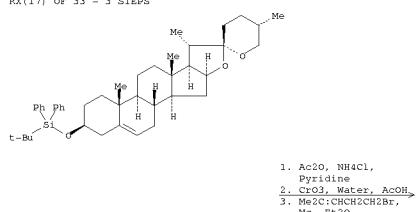


RX(16) OF 33 - 3 STEPS

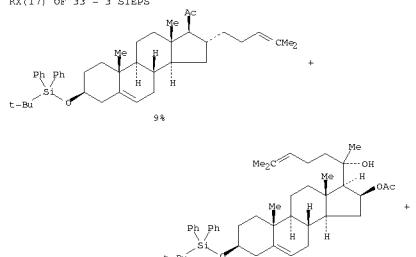


16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

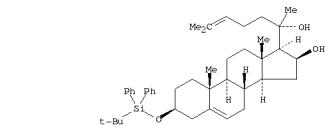
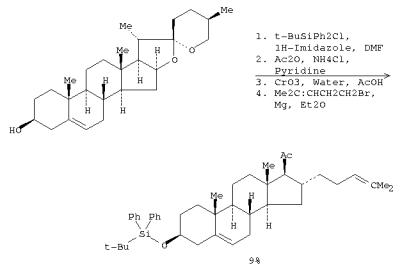
RX(17) OF 33 - 3 STEPS



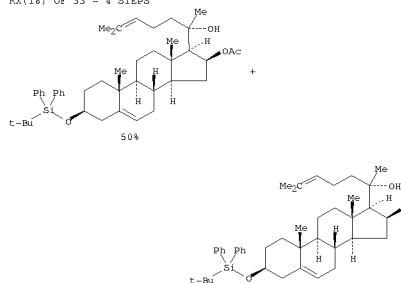
RX(17) OF 33 - 3 STEPS



RX(17) OF 33 - 3 STEPS

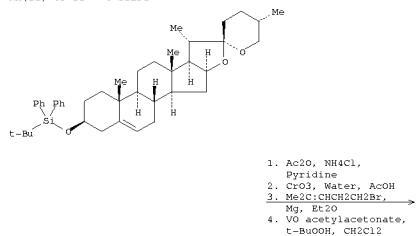
16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)  
RX(18) OF 33 - 4 STEPS

RX(18) OF 33 - 4 STEPS

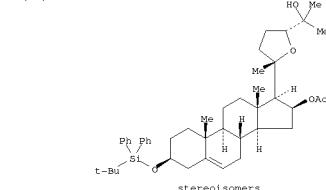


16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(21) OF 33 - 4 STEPS

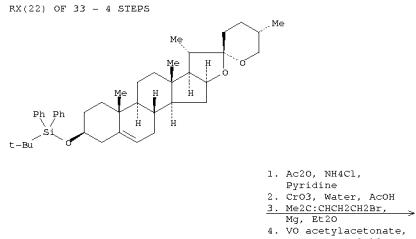


RX(21) OF 33 - 4 STEPS



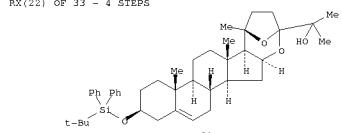
NOTE: 4) 24S-epimer is a trace product

RX(22) OF 33 - 4 STEPS

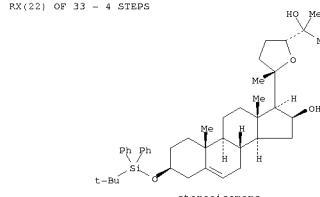


16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

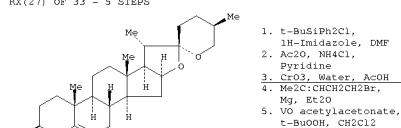
RX(22) OF 33 - 4 STEPS



RX(22) OF 33 - 4 STEPS

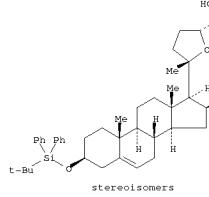


RX(27) OF 33 - 5 STEPS



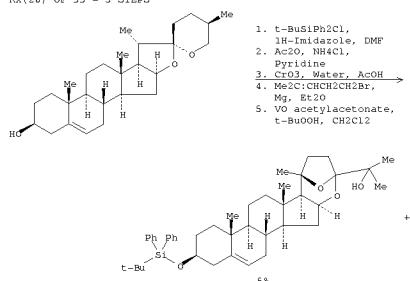
16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(27) OF 33 - 5 STEPS



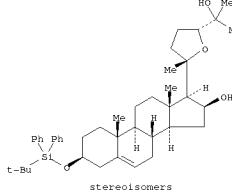
NOTE: 5) 24S-epimer is a trace product

RX(28) OF 33 - 5 STEPS

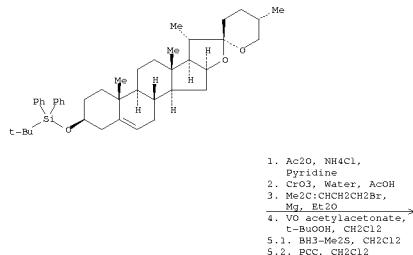


16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(28) OF 33 - 5 STEPS

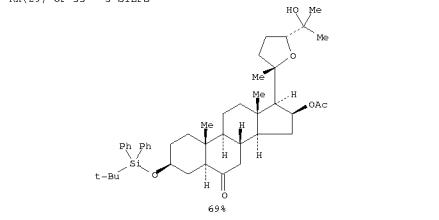


RX(29) OF 33 - 5 STEPS



16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

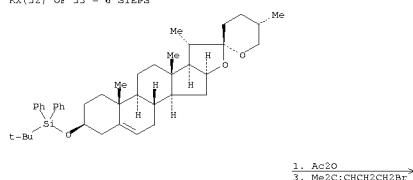
RX(29) OF 33 - 5 STEPS



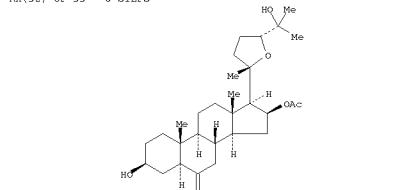
NOTE: 4) 24S-epimer is a trace product, 5) second step - ultrasound

16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(32) OF 33 - 6 STEPS

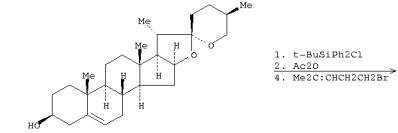


RX(32) OF 33 - 6 STEPS

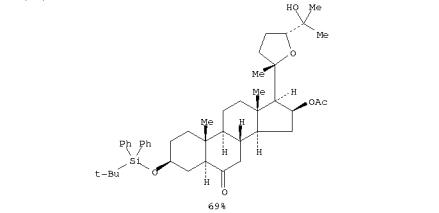


NOTE: 4) 24S-epimer is a trace product, 5) second step - ultrasound

RX(30) OF 33 - 6 STEPS

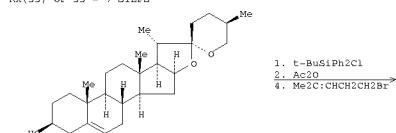


RX(30) OF 33 - 6 STEPS



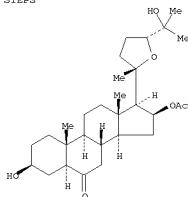
NOTE: 5) 24S-epimer is a trace product, 6) second step - ultrasound

RX(33) OF 33 - 7 STEPS



16 ANSWER 29 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

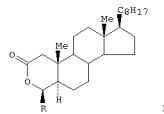
RX(3) OF 33 - 7 STEPS



NOTE: 5) 24S-epimer is a trace product, 6) second step - ultrasound

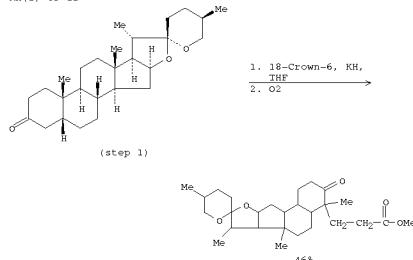
16 ANSWER 30 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

AN 116:194675 CASREACT  
 TI Regioselective oxidation of ketone by an oxidative reagent system  
 KH<sub>2</sub>O/18-crown-6/THF: application to synthesis of various lactones  
 AU Zhou, Weishan; Jiang, Biao; Pan, Xinfu  
 CS Shanghai Inst. Org. Chem., Chin. Acad. Sci., Shanghai, 200032, Peop. Rep. China  
 SO Chinese Chemical Letters (1991), 2(7), 505-8  
 CODEN: CCLE7; ISSN: 1001-8417  
 DT Journal  
 LA English  
 GI



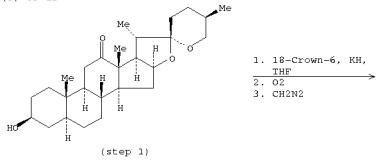
AB The regioselectivity in the oxidation of different types of steroid ketones with an oxidative reagent system, KH<sub>2</sub>O/18-Crown-6/THF is described. From these oxidative products, various lactones have been prepared. Thus treating 5α-cholestane-3-one with KH/18-Crown-6 in THF, followed by oxygen gave 75% lactone I (R = OH). NaBH<sub>4</sub> reduction of I (R = OH) gave lactone I (R = H).

RX(2) OF 13

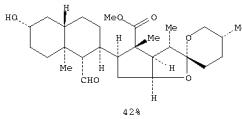


16 ANSWER 30 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

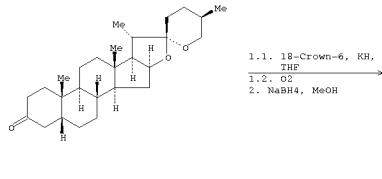
RX(5) OF 13



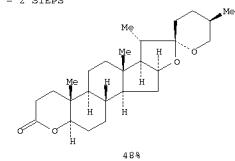
RX(5) OF 13



RX(11) OF 13 - 2 STEPS



RX(11) OF 13 - 2 STEPS

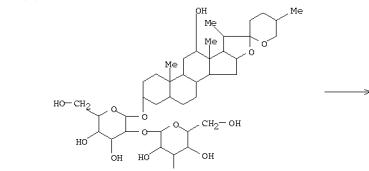


16 ANSWER 31 OF 38 CASREACT COPYRIGHT 2008 ACS on STN

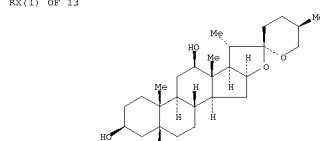
AN 115:110617 CASREACT  
 TI The constituents of Yucca gloriosa. Part 4. 12-Hydroxy steroid glycosides from the caudex of Yucca gloriosa  
 AU Nakano, Kimiko; Hara, Yumiko; Murakami, Kotaro; Takahashi, Yoshihisa;  
 Tomoda, Michiko; Tokushima Univ., Tokushima, 770, Japan  
 CS Phytochemistry (1991), 30(6), 1993-5  
 CODEN: PYTCAS; ISSN: 0031-9422  
 DT Journal  
 LA English

AB The structures of 3 new steroid saponins (tentatively named YS-XI, - XII and - XIII) have been isolated from the caudex of *Y. gloriosa* and characterized as 3- $\beta$ -D-glucopyranosyl 5 $\beta$ -(25R)-spirostan-3 $\beta$ ,12 $\beta$ -diol, 3 $\beta$ ,12 $\beta$ -dihydro-25R-[(1 $\alpha$ )-D-glucopyranosyl]-3 $\beta$ -(25R)-spirostan-3 $\beta$ ,12 $\beta$ -diol and 3-D- $\beta$ -D-glucopyranosyl 5 $\beta$ -(25R)-spirostan-2 $\beta$ ,3 $\beta$ ,12 $\beta$ -triol, resp.

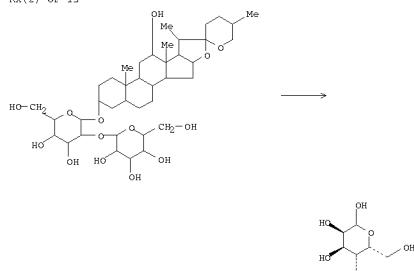
RX(1) OF 13



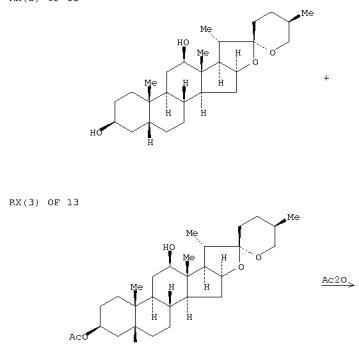
RX(1) OF 13



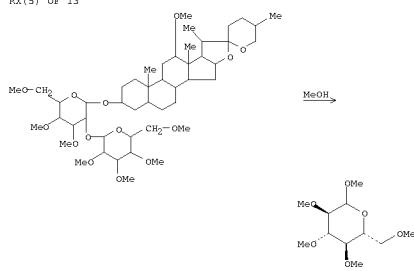
RX(2) OF 13



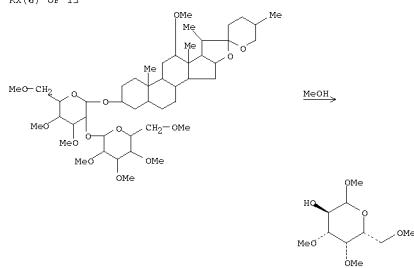
RX(3) OF 13



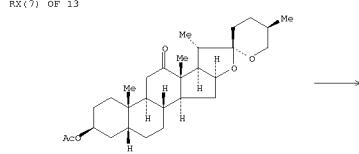
RX(5) OF 13



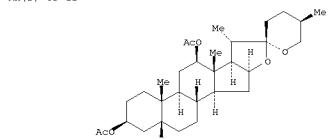
RX(6) OF 13



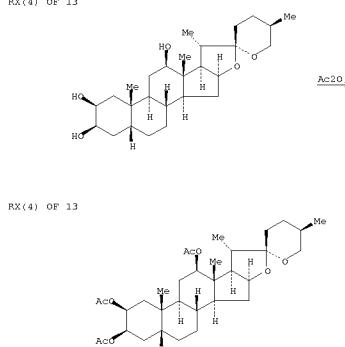
RX(7) OF 13



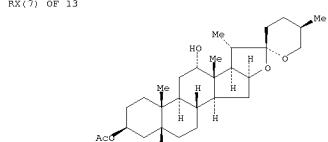
RX(3) OF 13



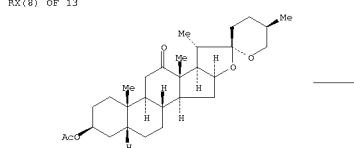
RX(4) OF 13



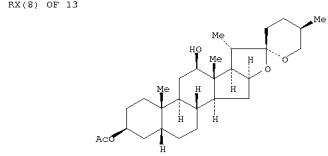
RX(7) OF 13



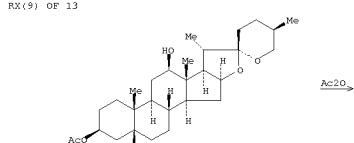
RX(8) OF 13



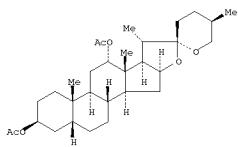
RX(8) OF 13



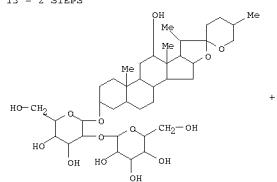
RX(9) OF 13



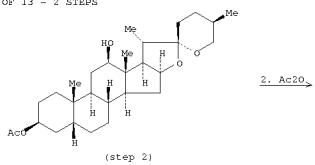
RX(9) OF 13



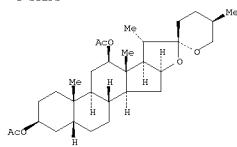
RX(10) OF 13 - 2 STEPS



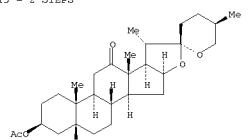
RX(10) OF 13 - 2 STEPS



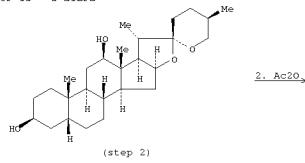
RX(10) OF 13 - 2 STEPS



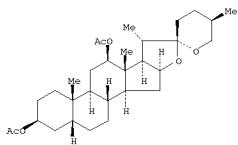
RX(11) OF 13 - 2 STEPS



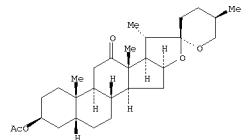
RX(11) OF 13 - 2 STEPS



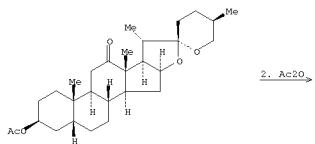
RX(11) OF 13 - 2 STEPS



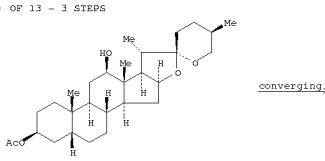
RX(13) OF 13 - 3 STEPS



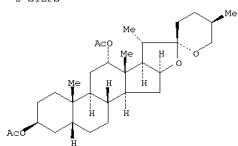
RX(12) OF 13 - 2 STEPS



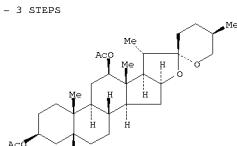
RX(13) OF 13 - 3 STEPS



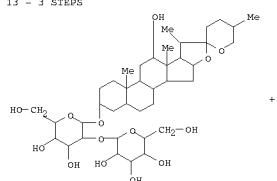
RX(12) OF 13 - 2 STEPS



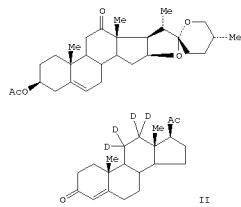
RX(13) OF 13 - 3 STEPS



RX(13) OF 13 - 3 STEPS

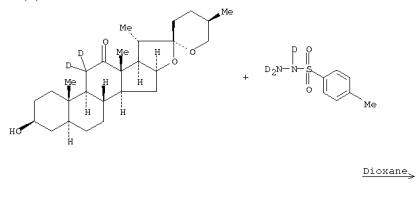


L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 113:191726 CASREACT  
 TI Synthesis of [11,11,12,12-H4]progesterone for mass spectral investigations of primate fetal metabolism  
 AU Krikler, S. M.; Smith, C. E.; Honour, John W.  
 CS Dep. Chem., Queen Mary Coll., London, E1 4NS, UK  
 SO Steroids (1990), 55(5), 222-7  
 CODEN: STEDAM; ISSN: 0039-128X  
 DI Journal  
 LA English  
 GL



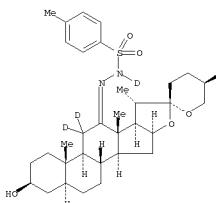
AB Hecogenin acetate (I) has been transformed into [11,11,12,12-<sup>2</sup>H4]progesterone (II) via base-catalyzed isotope exchange with D<sub>2</sub>O (at C-11). Subsequent decomposition of the 12-tosylhydrazone formed by the use of [N,N,N'-2H3]toluene-p-sulfonylhydrazine, and reduction with [2H2]diimide to give [11,11,12,12-<sup>2</sup>H4]tigogenin, followed by standard degradation of the spiroketol side chain and dehydrogenation in ring A.

RX(1) OF 36

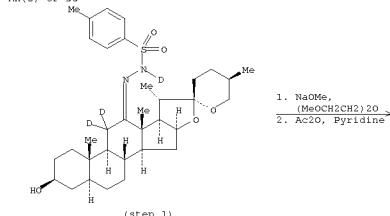


L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

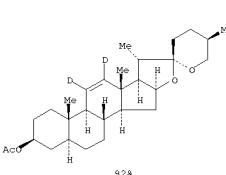
RX(1) OF 36



RX(2) OF 36

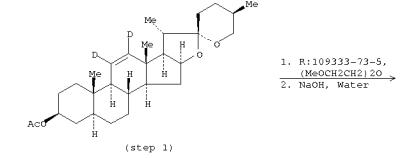


RX(2) OF 36



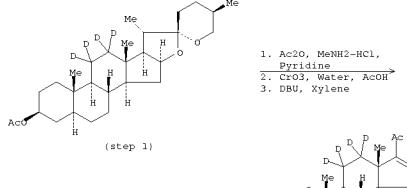
L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(3) OF 36

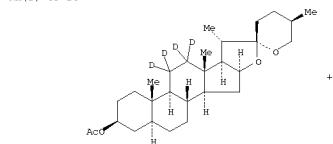


L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

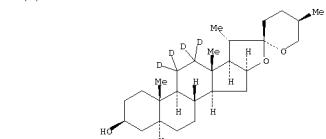
RX(4) OF 36



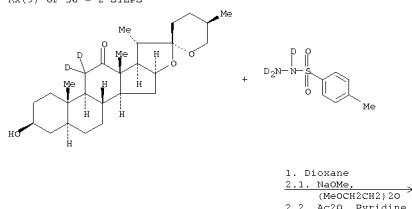
RX(3) OF 36



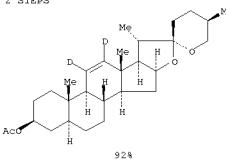
RX(3) OF 36



RX(9) OF 36 - 2 STEPS

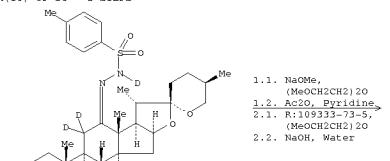


RX(9) OF 36 - 2 STEPS

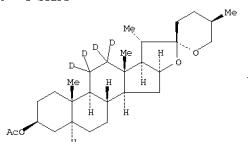


16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

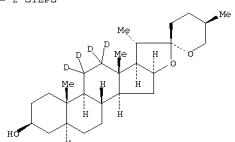
RX(10) OF 36 - 2 STEPS



RX(10) OF 36 - 2 STEPS

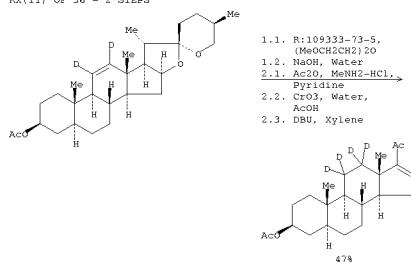


RX(10) OF 36 - 2 STEPS

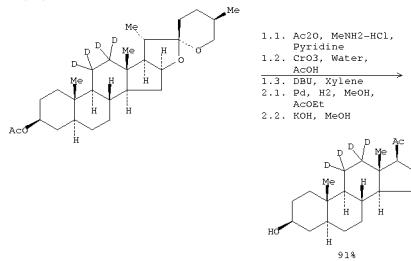


16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(11) OF 36 - 2 STEPS

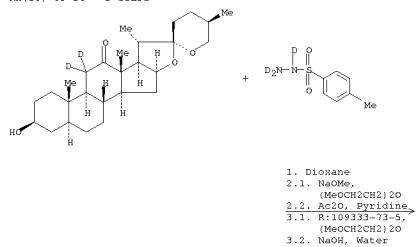


RX(12) OF 36 - 2 STEPS

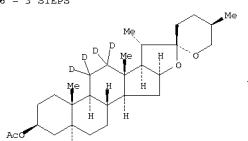


16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

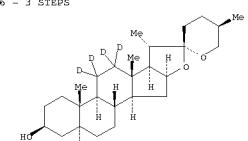
RX(16) OF 36 - 3 STEPS



RX(16) OF 36 - 3 STEPS

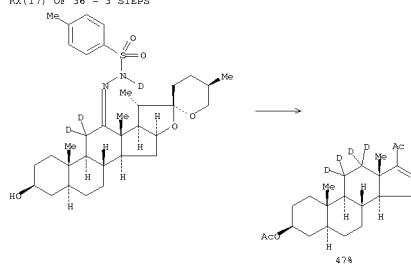


RX(16) OF 36 - 3 STEPS

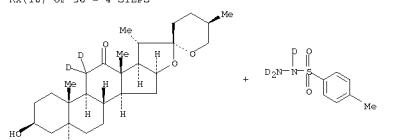


16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

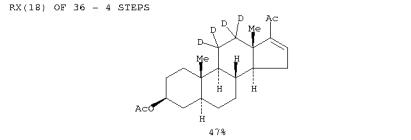
RX(17) OF 36 - 3 STEPS



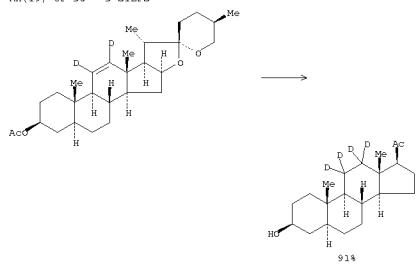
RX(18) OF 36 - 4 STEPS



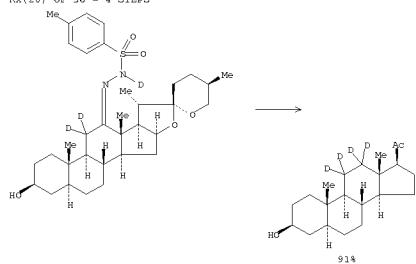
RX(18) OF 36 - 4 STEPS



L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)  
RX(19) OF 36 - 3 STEPS

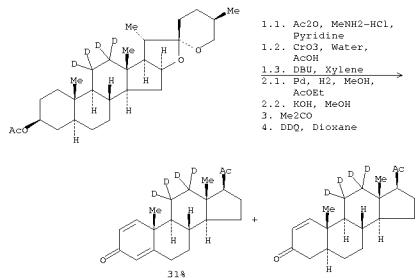


RX(20) OF 36 - 4 STEPS



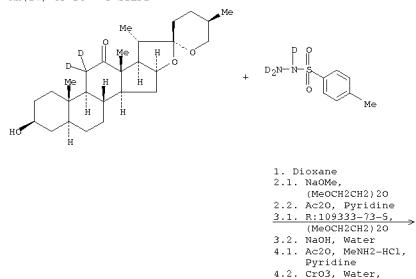
L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(24) OF 36 - 4 STEPS



NOTE: 3) Jones oxidn.

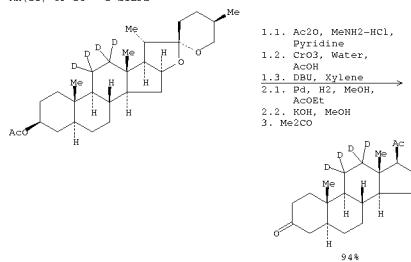
RX(27) OF 36 - 5 STEPS



1. Dioxane
2. NaOMe, (MeOCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>O
- 2.2. A, Pyridine
- 3.1. P-10933-73-5, (MeOCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>O
- 3.2. NaOH, Water
- 4.1. Ac<sub>2</sub>O, MeNH<sub>2</sub>-HCl, Pyridine
- 4.2. CrO<sub>3</sub>, Water

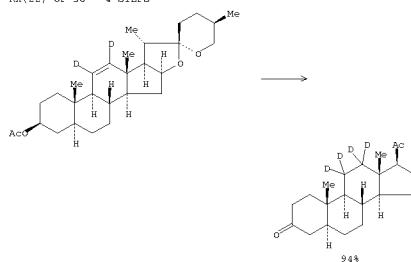
L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(21) OF 36 - 3 STEPS



NOTE: 3) Jones oxidn.

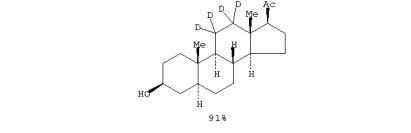
RX(22) OF 36 - 4 STEPS



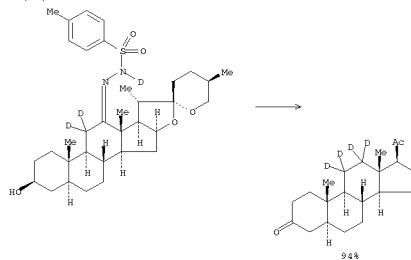
NOTE: 4) Jones oxidn.

L6 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(27) OF 36 - 5 STEPS

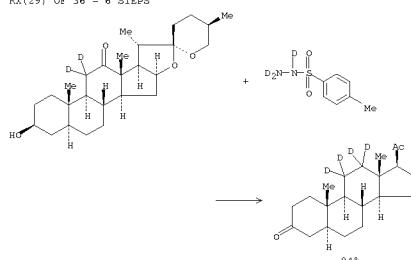


RX(28) OF 36 - 5 STEPS



NOTE: 5) Jones oxidn.

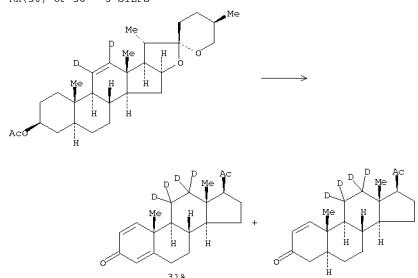
RX(29) OF 36 - 6 STEPS



NOTE: 6) Jones oxidn.

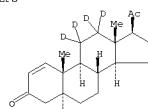
16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(30) OF 36 - 5 STEPS

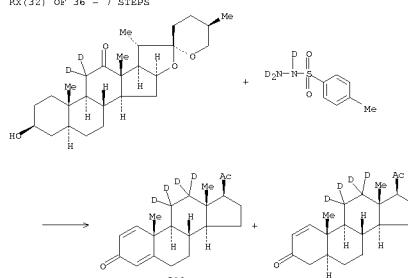


16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

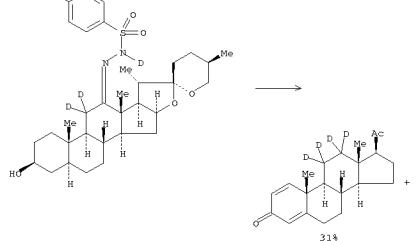
RX(31) OF 36 - 6 STEPS



RX(32) OF 36 - 7 STEPS

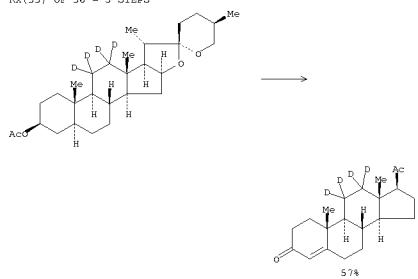


RX(31) OF 36 - 6 STEPS



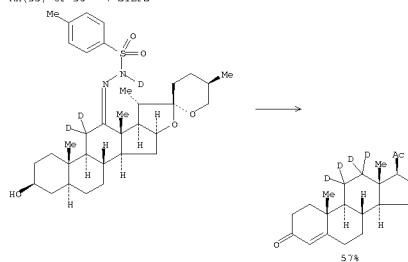
16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(33) OF 36 - 5 STEPS

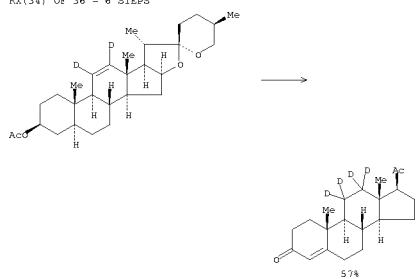


16 ANSWER 32 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

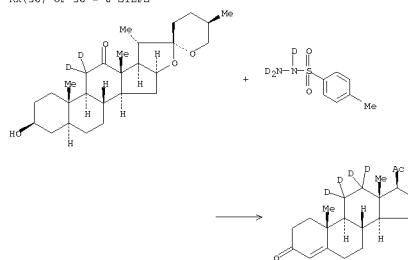
RX(35) OF 36 - 7 STEPS



RX(34) OF 36 - 6 STEPS



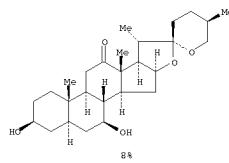
RX(36) OF 36 - 8 STEPS



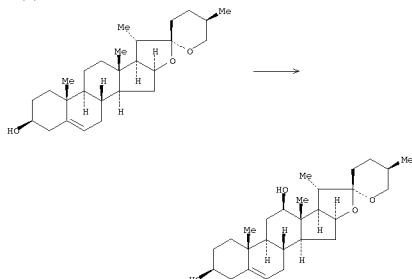
L6 ANSWER 33 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 113:129133 CASREACT  
 II Microbiological transformations of hecogenin and diosgenin by Cunninghamella elongata  
 AU Bhushan, Gopal, Patel, Amita V.; Crabb, Trevor A.  
 CS Sch. Pharm. Biomed. Sci., Portsmouth Polytech., Portsmouth, PO1 2DZ, UK  
 SG Phytochemistry (1990), 29(6), 1771-80  
 CODEN PYTCAS; ISSN: 0031-9422  
 DT Journal Article  
 LA English  
 AB Incubation of hecogenin with *C. elegans* led to the formation of (25R)-1 $\beta$ ,3 $\beta$ ,7 $\beta$ -trihydroxy-5 $\alpha$ -spirostan-12-one, (25R)-3 $\beta$ -hydroxy-5 $\alpha$ -spirostan-7,12-dione, and (25R)-3 $\beta$ -hydroxy-5 $\alpha$ -spirostan-7,12-dione. Incubation of (25R)-spirost-5-en-3 $\beta$ -ol (diosgenin) with the same fungus gave rise to (25R)-spirost-5-ene-3 $\beta$ ,7 $\beta$ ,12 $\beta$ -triol and (25R)-3 $\beta$ ,12 $\beta$ -dihydroxy-spirost-5-en-7-one.

L6 ANSWER 33 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

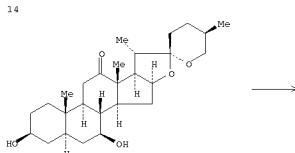
RX(2) OF 14



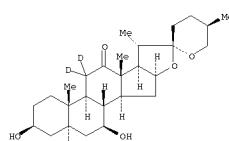
RX(1) OF 14



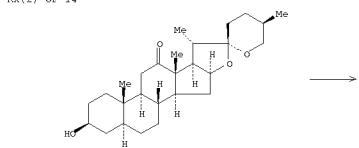
RX(3) OF 14



RX(3) OF 14

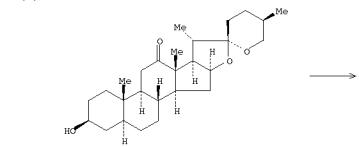


RX(2) OF 14

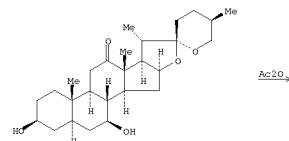


L6 ANSWER 33 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

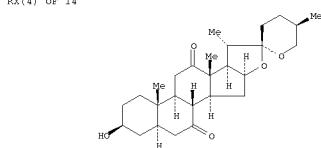
RX(4) OF 14



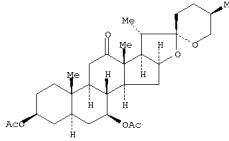
RX(6) OF 14



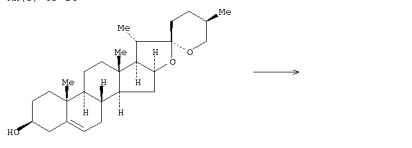
RX(4) OF 14



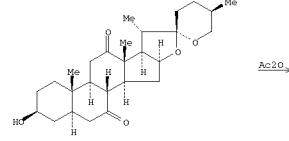
RX(6) OF 14



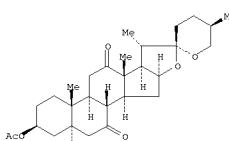
RX(5) OF 14



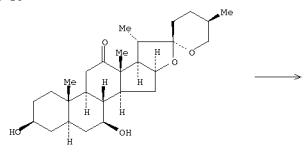
RX(7) OF 14



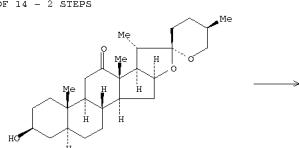
RX(7) OF 14



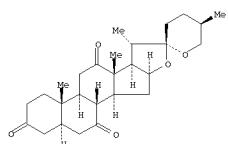
RX(8) OF 14



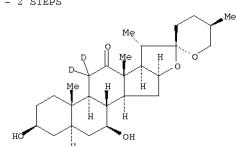
RX(10) OF 14 - 2 STEPS



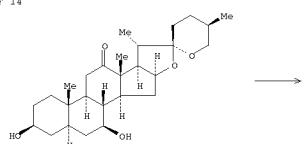
RX(8) OF 14



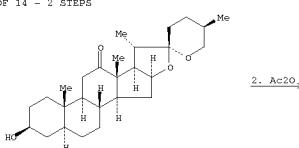
RX(10) OF 14 - 2 STEPS



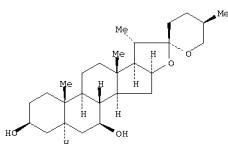
RX(9) OF 14



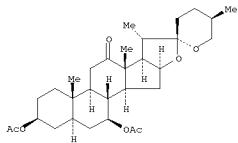
RX(11) OF 14 - 2 STEPS



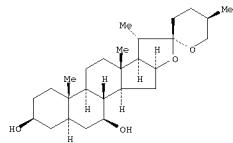
RX(9) OF 14



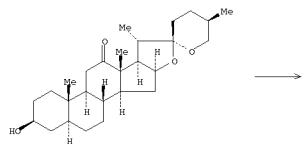
RX(11) OF 14 - 2 STEPS



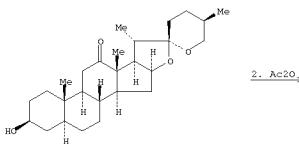
RX(13) OF 14 - 2 STEPS



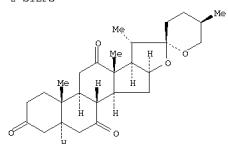
RX(12) OF 14 - 2 STEPS



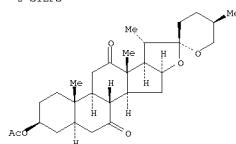
RX(14) OF 14 - 2 STEPS



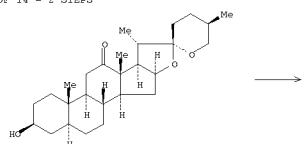
RX(12) OF 14 - 2 STEPS



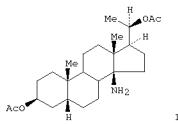
RX(14) OF 14 - 2 STEPS



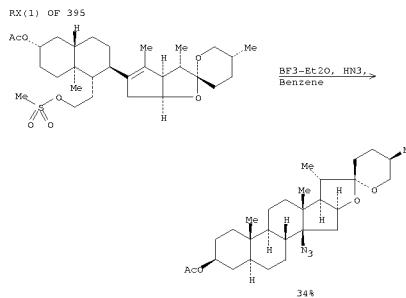
RX(13) OF 14 - 2 STEPS



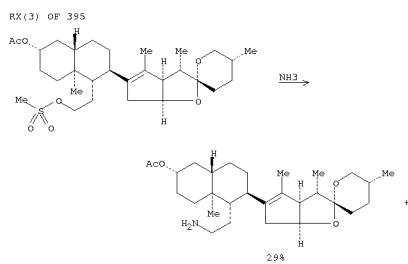
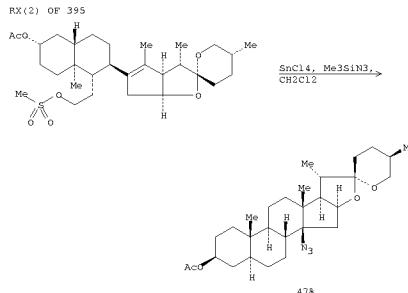
L6 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 112:98961 CASREACT  
 TI Introduction of a 14 $\beta$ -amino function into a steroid nucleus.  
 Application to the cardioactive 14 $\beta$ -amino-5 $\beta$ -pregnane-  
 3 $\beta$ ,20 $\beta$ -diol starting from progesterone and deoxycholic acid.  
 AU Adecti, G. B.; Charpentier, B.; Montagnac, A.; Riche, C.;  
 Pais, M.  
 CS Inst. Chim. Subst. Nat., Gif-sur-Yvette, 91198, Fr.  
 SG Tetrahedron (1989), 45(12), 3717-30  
 CODEN: TETRAAB; ISSN: 0040-4020  
 DT Journal  
 LA French  
 GI



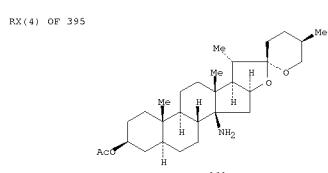
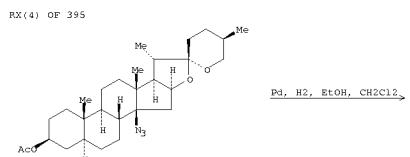
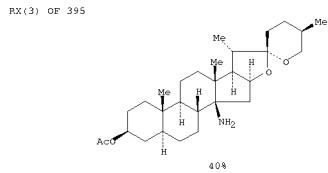
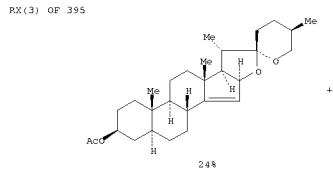
AB Two methods were studied for introducing a 14 $\beta$ -amino function into a steroid mol.: (i)  $\pi$ -cyclization of a 10,13-seco-4 $\beta$ -steroid bearing a 12-methanesulfonfyl group in the presence of NH<sub>3</sub>, BF<sub>3</sub>.Et<sub>2</sub>O or ammonia, (ii) treatment of a 4 $\Delta$ -steroid with NH<sub>3</sub>, BF<sub>3</sub>.Et<sub>2</sub>O. This second method allowed the preparation of the cardioactive 14 $\beta$ -amino-5 $\beta$ -pregnane-3 $\beta$ ,20 $\beta$ -diol (I) starting from the easily available steroids deoxycholic acid and progesterone.



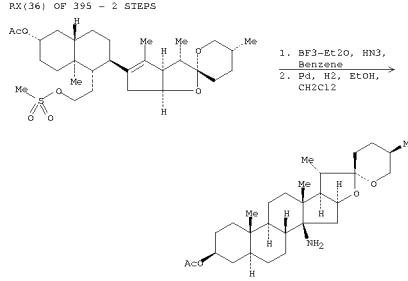
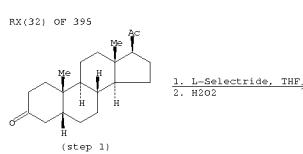
L6 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)



L6 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

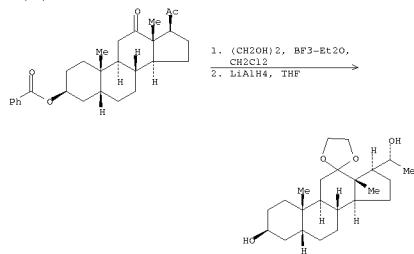


L6 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

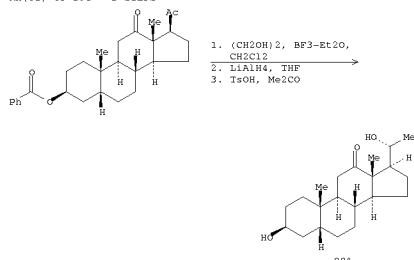


16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(41) OF 395 - 2 STEPS

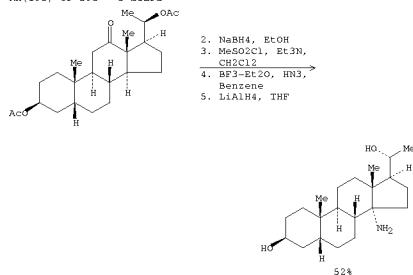


RX(81) OF 395 - 3 STEPS



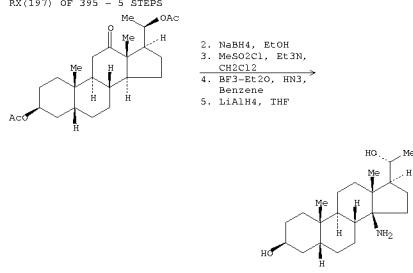
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(195) OF 395 - 5 STEPS



NOTE: 1) photochem.

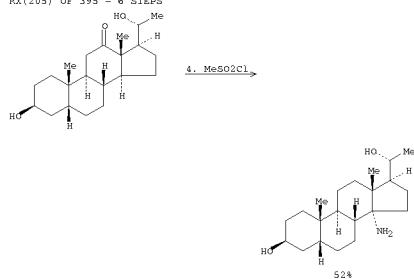
RX(197) OF 395 - 5 STEPS



NOTE: 1) photochem.

16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

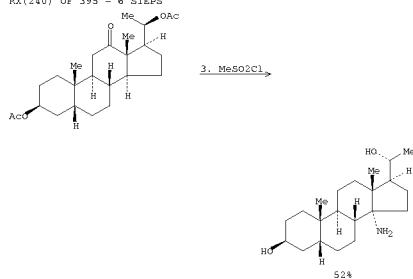
RX(205) OF 395 - 6 STEPS



NOTE: 2) photochem.

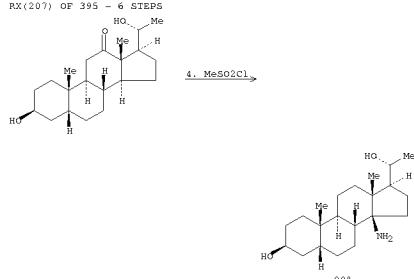
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(240) OF 395 - 6 STEPS



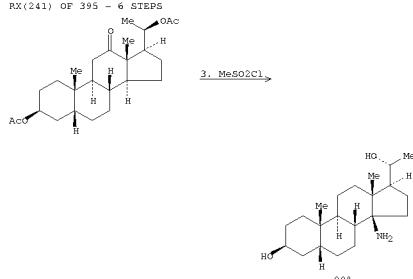
NOTE: 1) photochem.

RX(207) OF 395 - 6 STEPS



NOTE: 2) photochem.

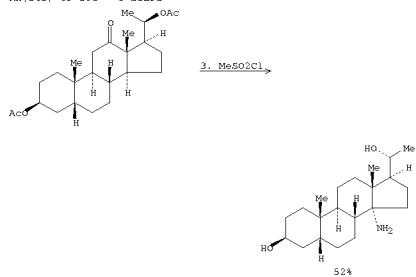
RX(241) OF 395 - 6 STEPS



NOTE: 1) photochem.

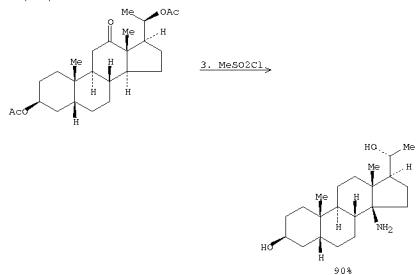
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(243) OF 395 - 6 STEPS



NOTE: 1) photochem.

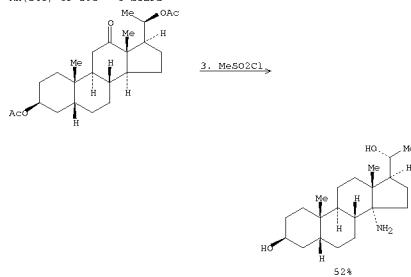
RX(244) OF 395 - 6 STEPS



NOTE: 1) photochem.

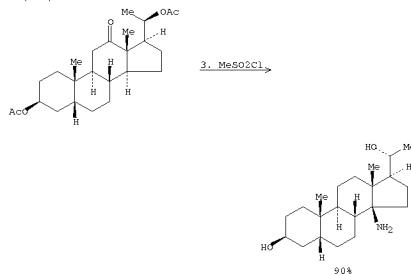
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(246) OF 395 - 6 STEPS



NOTE: 1) photochem.

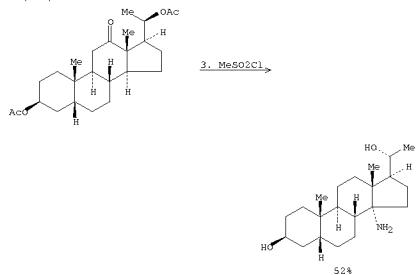
RX(247) OF 395 - 6 STEPS



NOTE: 1) photochem.

16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

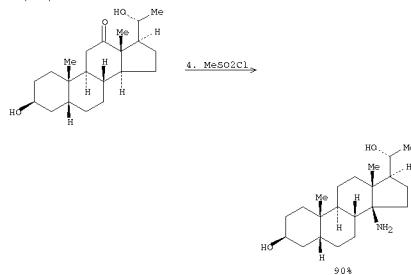
RX(250) OF 395 - 6 STEPS



NOTE: 1) photochem.

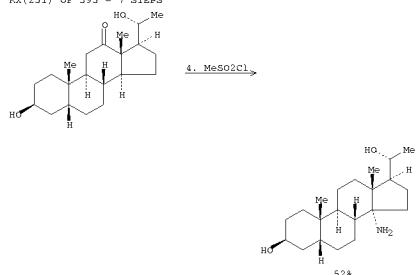
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(252) OF 395 - 7 STEPS



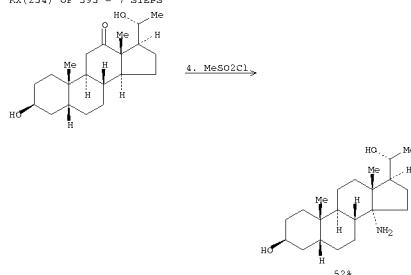
NOTE: 2) photochem.

RX(251) OF 395 - 7 STEPS



NOTE: 2) photochem.

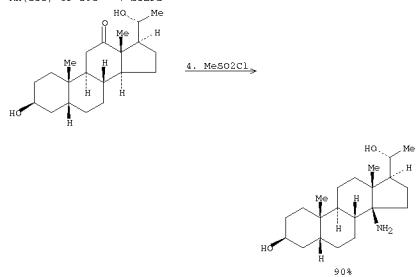
RX(254) OF 395 - 7 STEPS



NOTE: 2) photochem.

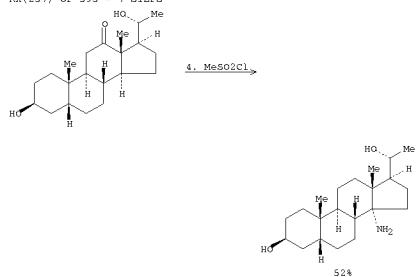
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(255) OF 395 - 7 STEPS



NOTE: 2) photochem.

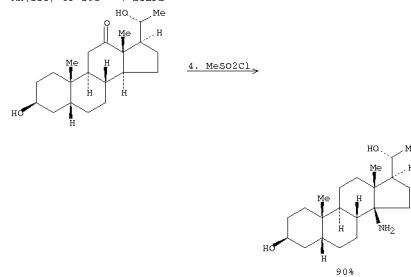
RX(257) OF 395 - 7 STEPS



NOTE: 2) photochem.

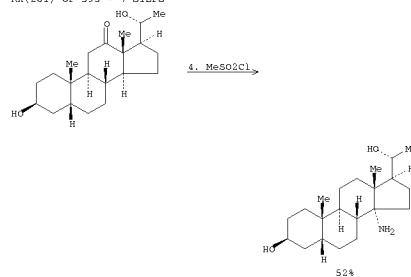
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(258) OF 395 - 7 STEPS



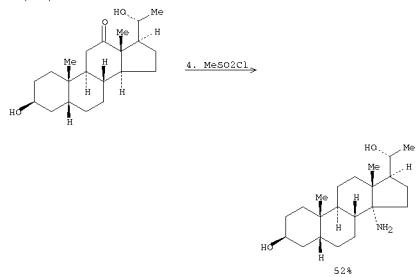
NOTE: 2) photochem.

RX(261) OF 395 - 7 STEPS



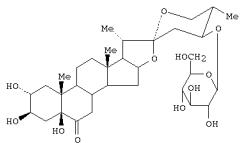
16 ANSWER 34 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(261) OF 395 - 7 STEPS



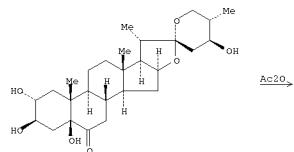
=> d bib abs crd 35-

L6 ANSWER 35 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 112:95499 CASREACT  
 TI Steroids of the spirostan and furostan series from the genus Allium.  
 X-ray Structure of anzurogenin C and anzuroside from fruits of Allium  
 suaveolens and A. stipitatum  
 AU Vollerer, Yu. S.; Kravets, S. D.; Shashkov, A. S.; Gorovits, M. B.;  
 Abubakirov, N. K.  
 CS Inst. Khim. Rast. Veshchestv. Taskent, USSR  
 SO Khimiya Priborov Soedinenii (1989), (4), 505-10  
 CODEN KPSUAR; ISSN: 0023-1150  
 DT Journal  
 LA Russian  
 GI

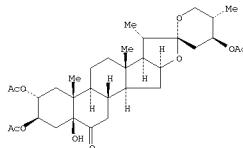


AB A new steroid glycoside of the spirostan series, anzuroside (I), was isolated from the title Allium species; enzymic cleavage of I gave the native genin, anzurogenin C (II). The structures of I and II were confirmed by NMR spectroscopy, derivatization, and other phys.-chemical means.

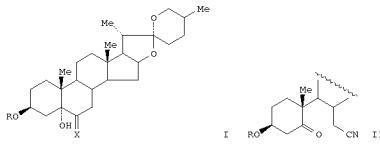
RX(1) OF 1



RX(1) OF 1

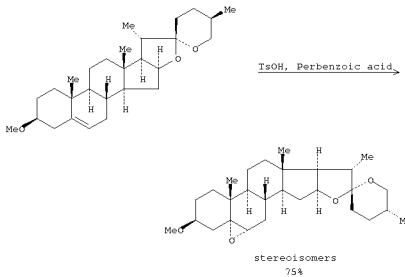


L6 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 110:154686 CASREACT  
 TI Schmidt reaction of (25R)-6-oxo-spirostan-5α-ol-3β-alkyl ether  
 and Beckmann rearrangement of the corresponding ketoxine  
 AU Siddiqui, A. H.; Ramesh, D.; Reddy, K. Sudhakar; Memariani, Mahmood; Rao,  
 N. Sabu; Narayana, T.  
 CS Dep. Chem., Nizam Coll., Hyderabad, 500 001, India  
 SO Journal of the Indian Chemical Society (1988), 65(9), 672-3  
 CODEN JICSAH; ISSN: 0019-4522  
 DT Journal  
 LA English  
 GI



AB The Schmidt reaction of title spirostanes I (R = Me, Et; X = O) with NaBH3/N2H4/H2SO4 gave seco nitriles II. The Beckman rearrangement of oximes I (R = Me, Et; X = NHOR) also gave II.

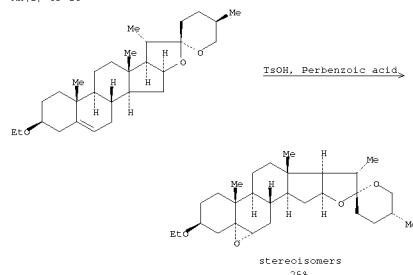
RX(1) OF 26



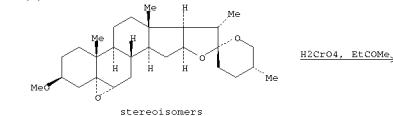
L6 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

L6 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

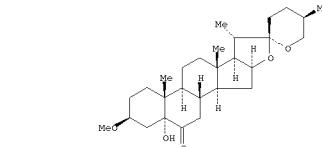
RX(2) OF 26



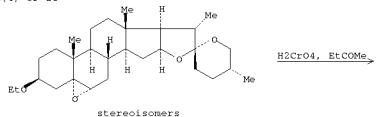
RX(3) OF 26



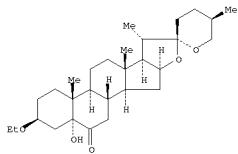
RX(3) OF 26



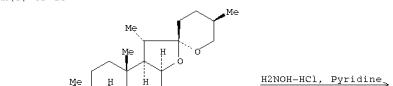
RX(4) OF 26



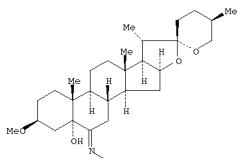
RX(4) OF 26



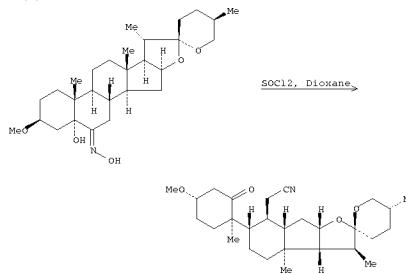
RX(5) OF 26



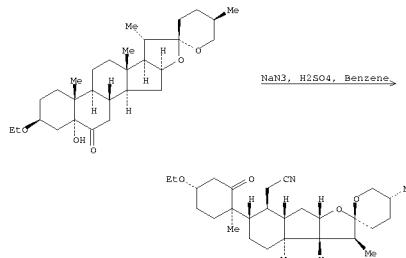
RX(5) OF 26



RX(6) OF 26



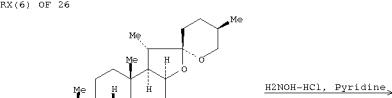
RX(9) OF 26



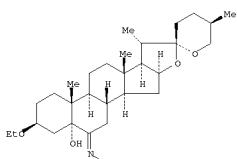
RX(11) OF 26 - 2 STEPS



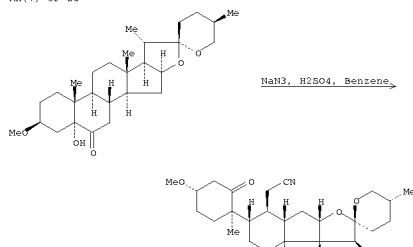
RX(6) OF 26



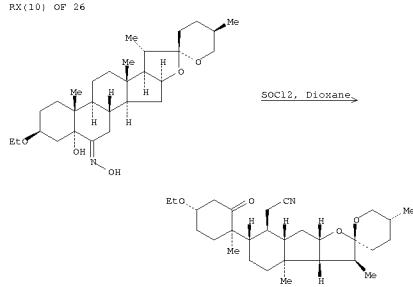
RX(6) OF 26



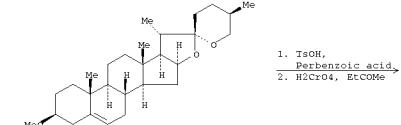
RX(7) OF 26



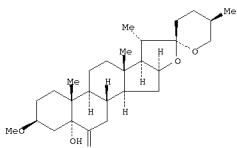
RX(10) OF 26



RX(11) OF 26 - 2 STEPS

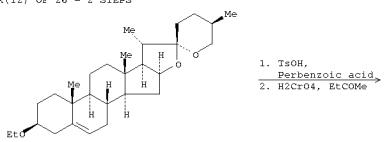


RX(11) OF 26 - 2 STEPS

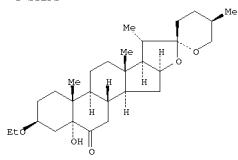


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

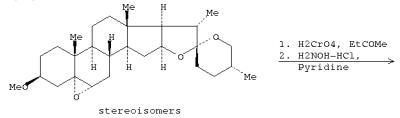
RX(12) OF 26 - 2 STEPS



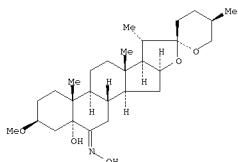
RX(12) OF 26 - 2 STEPS



RX(13) OF 26 - 2 STEPS

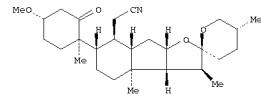
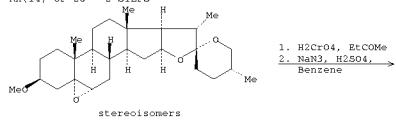


RX(13) OF 26 - 2 STEPS

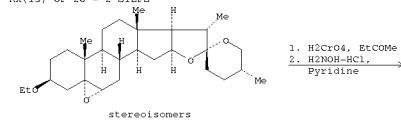


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

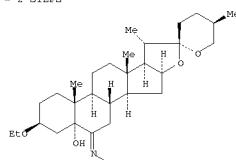
RX(14) OF 26 - 2 STEPS



RX(15) OF 26 - 2 STEPS

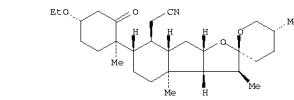
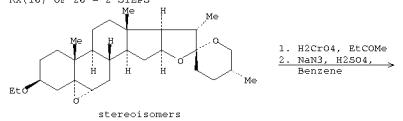


RX(15) OF 26 - 2 STEPS

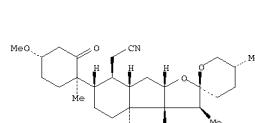
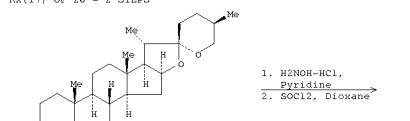


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(16) OF 26 - 2 STEPS

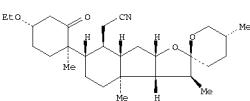
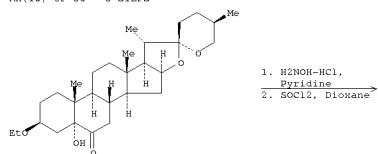


RX(17) OF 26 - 2 STEPS

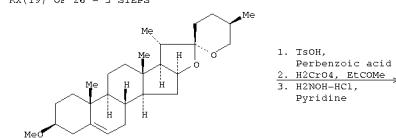


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

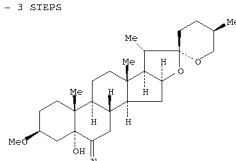
RX(18) OF 26 - 2 STEPS



RX(19) OF 26 - 3 STEPS

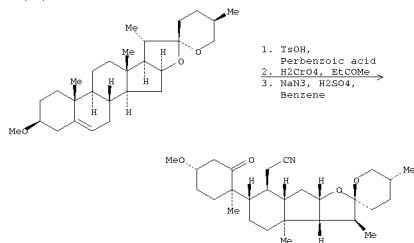


RX(19) OF 26 - 3 STEPS

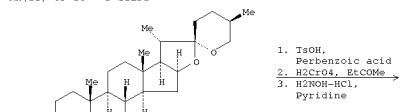


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

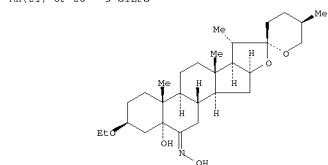
RX(20) OF 26 - 3 STEPS



RX(21) OF 26 - 3 STEPS

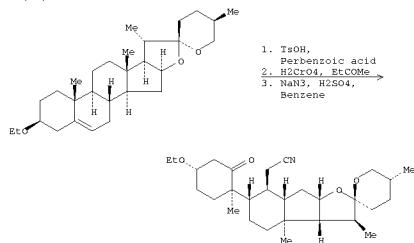


RX(21) OF 26 - 3 STEPS

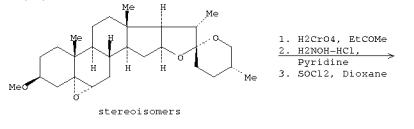


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(22) OF 26 - 3 STEPS

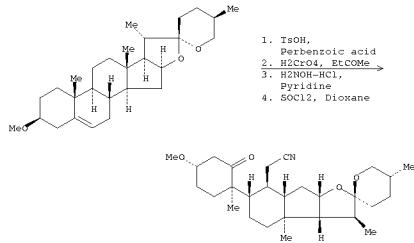


RX(23) OF 26 - 3 STEPS



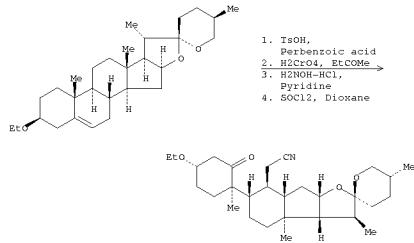
16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(24) OF 26 - 4 STEPS

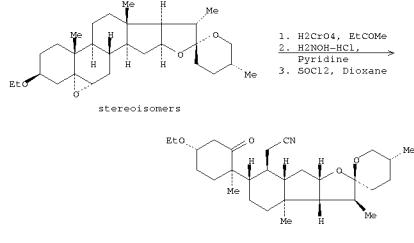


16 ANSWER 36 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(26) OF 26 - 4 STEPS



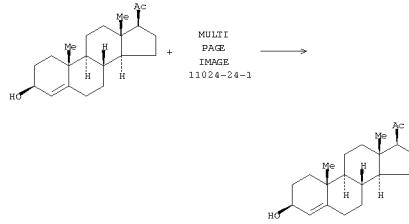
RX(25) OF 26 - 3 STEPS



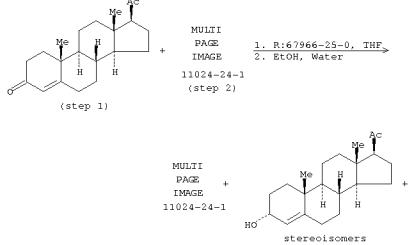
L6 ANSWER 37 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 105:153383 CASREACT  
 TI Synthesis of the allylic gonadal steroids, 3 $\alpha$ -hydroxy-4-pregnene-20-one and 3 $\alpha$ -hydroxy-4-androsten-17-one, and of 3 $\alpha$ -hydroxy-5 $\beta$ -androstane-3,20-dione.  
 AU Wiebe, J. P.; Deline, C.; Buckingham, K. D.; Dave, Vinod; Stothers, J. B.  
 CS Dep. Zool., Univ. West. Ontario, London, N6A 5B7, UK  
 SO Steroids (1985), 45(1), 39-51  
 CODEN: STDMAM; ISSN: 0039-128X  
 DA 1985-01-01  
 LA English  
 AB The recently isolated allylic gonadal steroids, 3 $\alpha$ -hydroxy-4-pregnene-20-one (I) and 3 $\alpha$ -hydroxy-4-androsten-17-one (II) were prepared using progesterone and 4-androstone-3,17-dione as substrates and potassium triisopropenylboride (K3OB) as reagent. Similar reactions were also used for the reduction of 5 $\beta$ -pregnen-3,20-dione to 3 $\alpha$ -hydroxy-5 $\beta$ -pregnan-20-one (III). The yields were about 15%, 50%, and >90% for I, II, and III, resp. Structures of the products, including the 3 $\beta$ -isomers and the 17 $\alpha$ -epimer, formed in these reactions were determined by NMR and mass spectroscopic methods.

L6 ANSWER 37 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

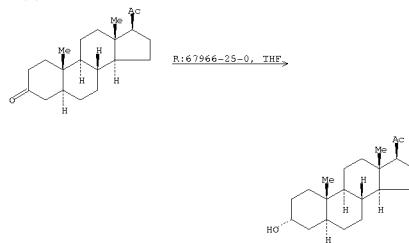
RX(4) OF 11



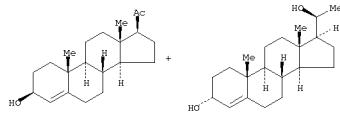
RX(1) OF 11



RX(6) OF 11

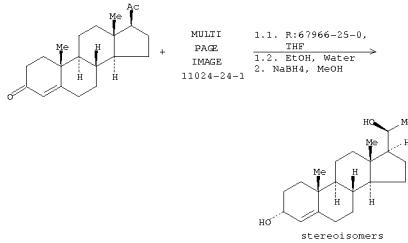


RX(1) OF 11



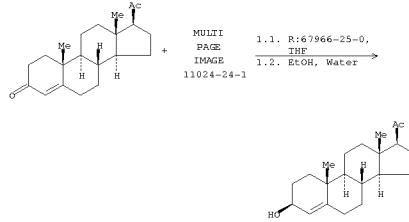
L6 ANSWER 37 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(7) OF 11 - 2 STEPS

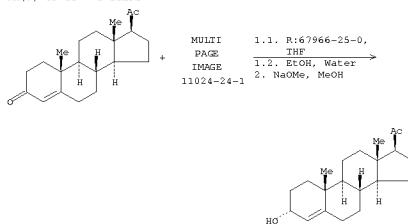


L6 ANSWER 37 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

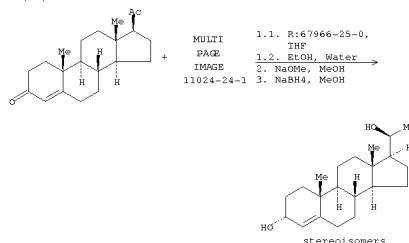
RX(10) OF 11 - 2 STEPS



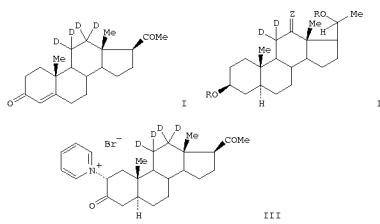
RX(9) OF 11 - 2 STEPS



RX(11) OF 11 - 3 STEPS

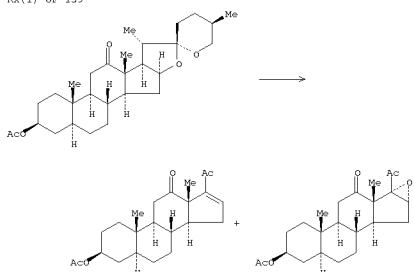


L6 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN  
 AN 103:6593 CASREACT  
 II Synthesis of 11,11,12,12-tetra-deuteroprogesterone  
 AU Gorbunova, N. E.; Mints, K. K.  
 CS last. Eks. Endokr. Khimil. Nauk. Gorm., Moscow, USSR  
 SG Zhurnal Obshchei Khimii (1985), 55(2), 427-40  
 CODEN: ZOKH4; ISSN: 0044-460X  
 DT Journal  
 LA Russian  
 GI



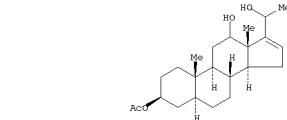
AB The tetra-deuteroprogesterone I was prepared from hecogenin acetate. Key steps included Huang-Minlon reduction of oxo diol II ( $R = D$ ;  $Z = O$ ) to give II ( $R = H$ ;  $Z = O_2$ ), and pyrolytic elimination reaction of pyridinium salt III to give I.

RX(1) OF 159



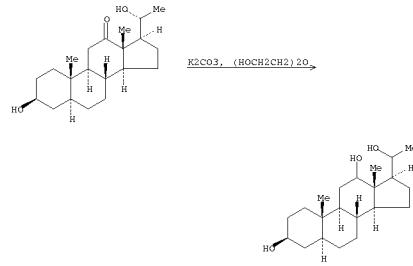
L6 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(6) OF 159

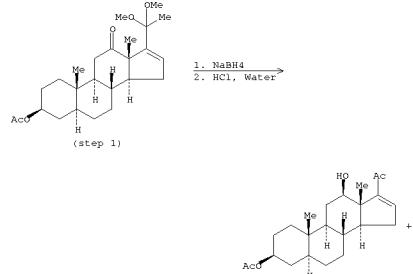


L6 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

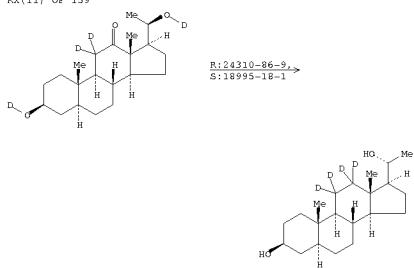
RX(6) OF 159



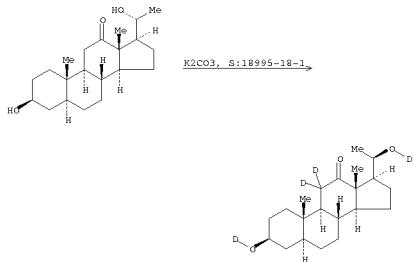
RX(8) OF 159



RX(11) OF 159

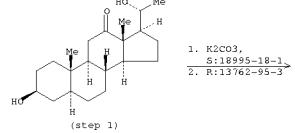


RX(13) OF 159

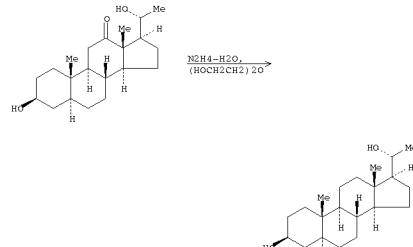


L6 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(14) OF 159

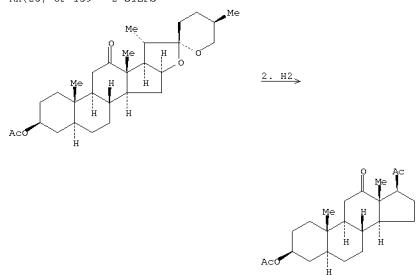


RX(15) OF 159

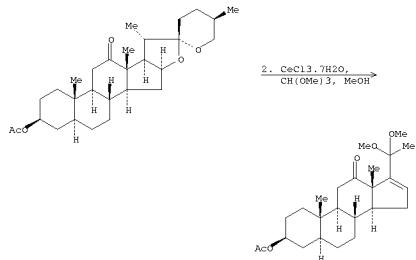


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(26) OF 159 - 2 STEPS

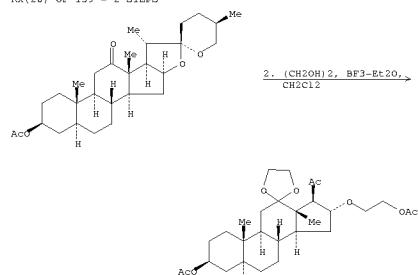


RX(27) OF 159 - 2 STEPS

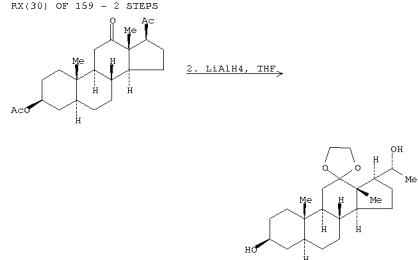


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(28) OF 159 - 2 STEPS

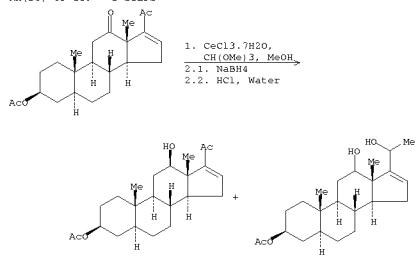


RX(30) OF 159 - 2 STEPS

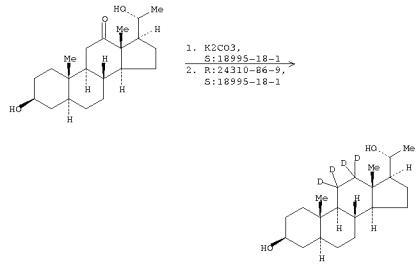


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(36) OF 159 - 2 STEPS

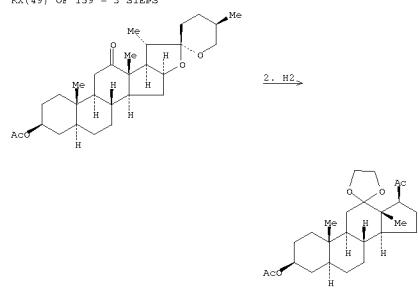


RX(39) OF 159 - 2 STEPS

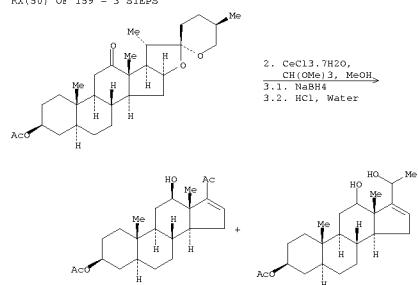


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(49) OF 159 - 3 STEPS

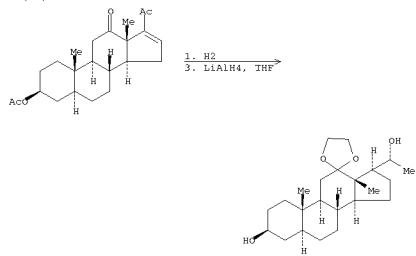


RX(50) OF 159 - 3 STEPS

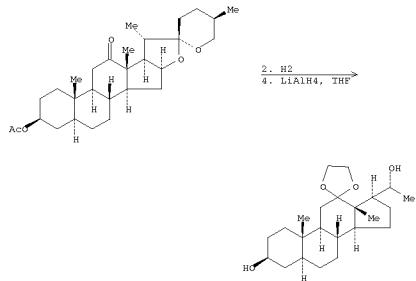


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(51) OF 159 - 3 STEPS

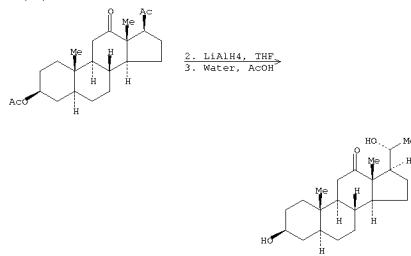


RX(52) OF 159 - 4 STEPS

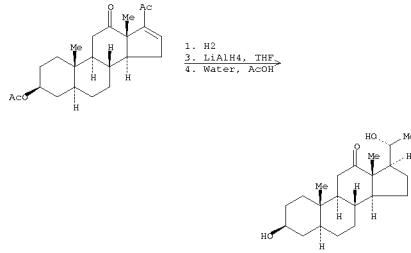


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(53) OF 159 - 3 STEPS

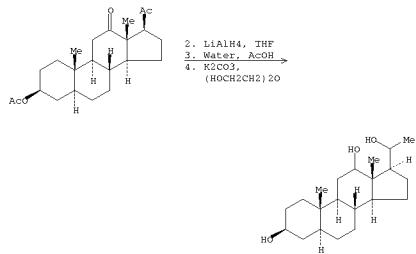


RX(54) OF 159 - 4 STEPS

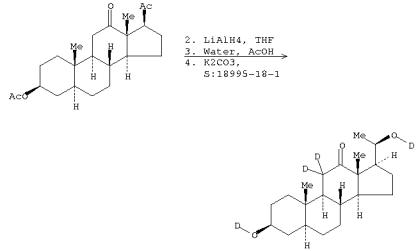


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(59) OF 159 - 4 STEPS

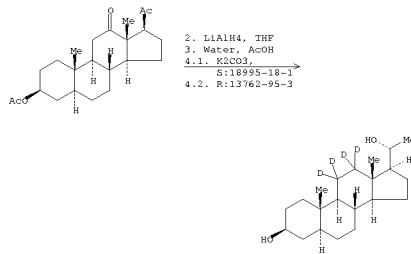


RX(60) OF 159 - 4 STEPS

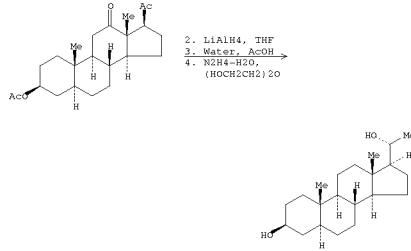


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(61) OF 159 - 4 STEPS

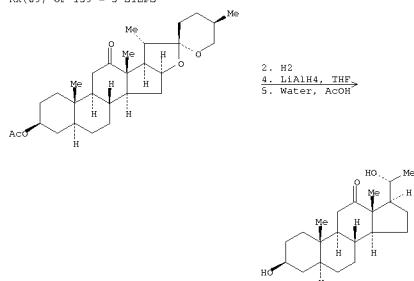


RX(62) OF 159 - 4 STEPS

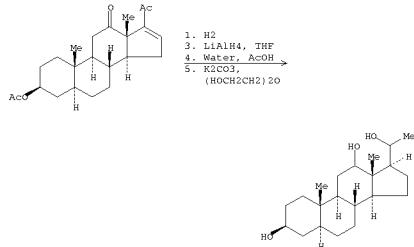


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(89) OF 159 - 5 STEPS

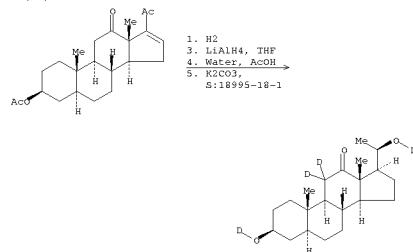


RX(90) OF 159 - 5 STEPS

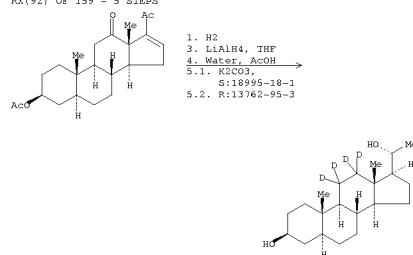


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(91) OF 159 - 5 STEPS

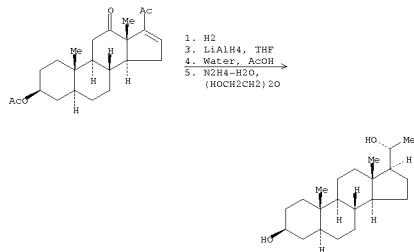


RX(92) OF 159 - 5 STEPS



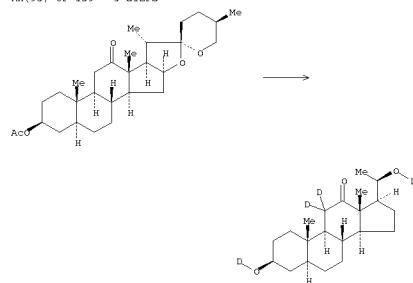
16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(93) OF 159 - 5 STEPS

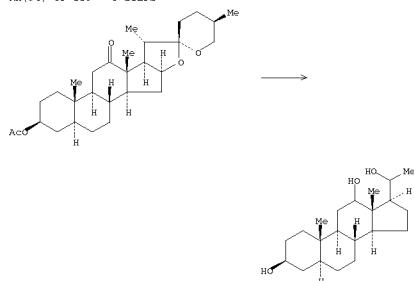


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

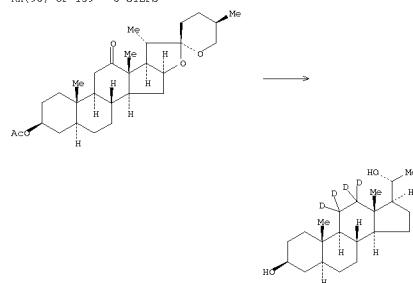
RX(95) OF 159 - 6 STEPS



RX(94) OF 159 - 6 STEPS

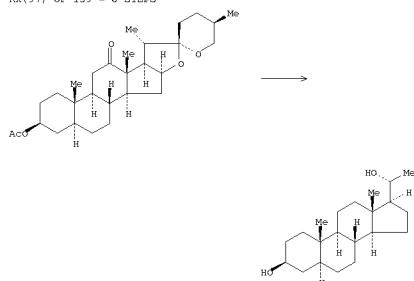


RX(96) OF 159 - 6 STEPS

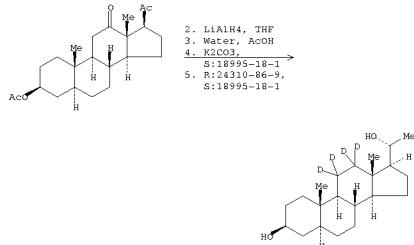


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(97) OF 159 - 6 STEPS

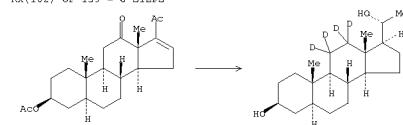


RX(99) OF 159 - 5 STEPS

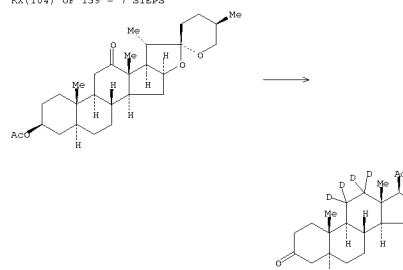


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(102) OF 159 - 6 STEPS

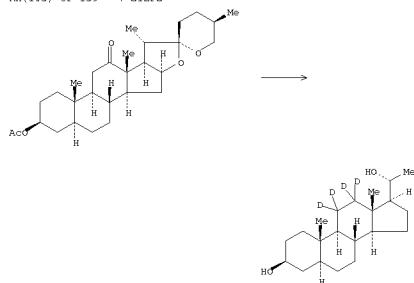


RX(104) OF 159 - 7 STEPS



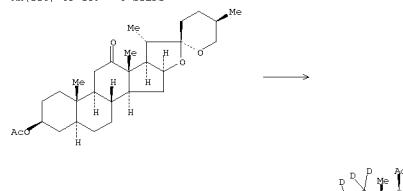
16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(105) OF 159 - 7 STEPS

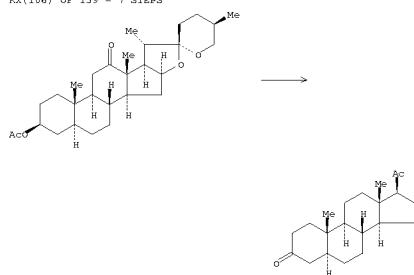


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

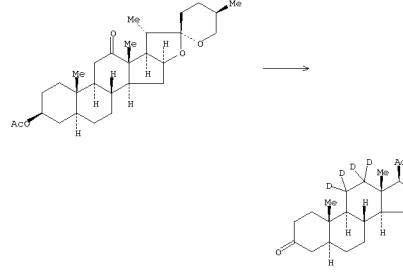
RX(116) OF 159 - 8 STEPS



RX(106) OF 159 - 7 STEPS

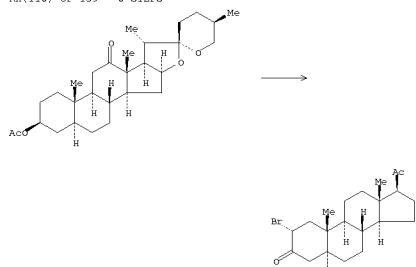


RX(117) OF 159 - 8 STEPS



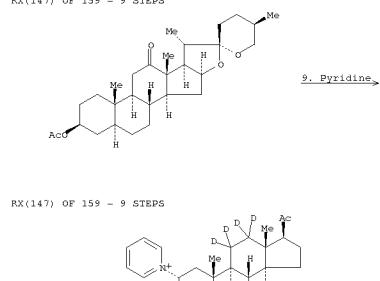
16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(138) OF 159 - 8 STEPS

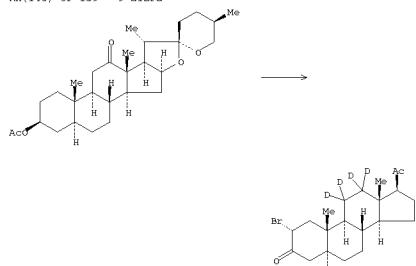


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

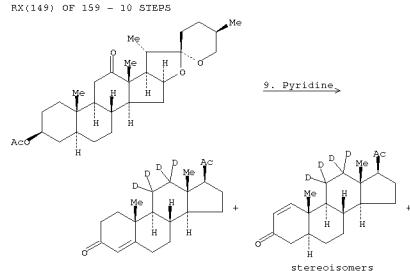
RX(147) OF 159 - 9 STEPS



RX(146) OF 159 - 9 STEPS

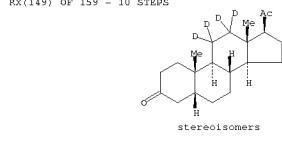


RX(149) OF 159 - 10 STEPS



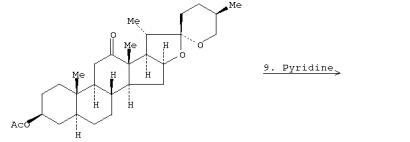
16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

RX(149) OF 159 - 10 STEPS

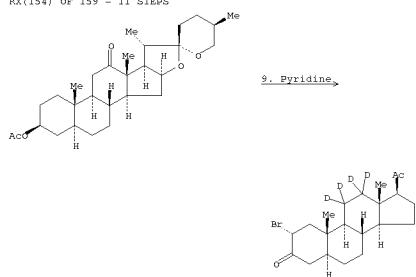


16 ANSWER 38 OF 38 CASREACT COPYRIGHT 2008 ACS on STN (Continued)

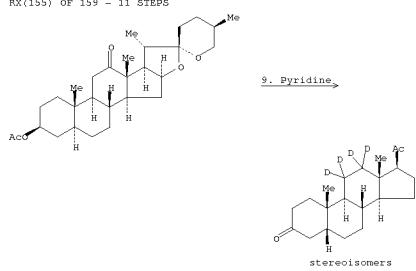
RX(159) OF 159 - 12 STEPS



RX(154) OF 159 - 11 STEPS



RX(155) OF 159 - 11 STEPS



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